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AN ARIZONA APIARY IN WINTER, BELONGING TO S. M. CAMPBELL, OF FLAGSTAFF.

HIVES NOT TOO LARGE—C. P. Dadant.
BEEKEEPING IN LOUISIANA—F. C. Pellett.

TO SECURE LOWER FREIGHT RATES—R. C. Wright.
UNFINISHED SECTIONS—J. E. Crane.



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IN THIS ISSUE

Hives Not Too Large—C. P. Dadant	11	What About the West?—C. F. Muth	26
Direct Marketing of Honey—F. B. Paddock	13	The Package Business—Jes Dalton	27
Editorial	14	Packages or Nuclei—which?—L. T. Floyd	27
How Shippers Can Co-operate to Secure Lower Freight Rate—R. C. Wright	16	Italians vs. Blacks—W. E. Joor	28
Recipes for Honey—Luella B. Lyons	16	Advertising in a Bank Window—E. A. Meineke	29
Notes from British Columbia—J. W. Winson	17	The Huber Letters	30
Beekeeping in Louisiana—F. C. Pellett	18	The Beginning of Business—J. F. Diemer	31
Stored Pollen—Allen Latham	21	Editor's Answers	32
Unfinished Sections—J. E. Crane	22	Making Money Out of Bees—Hy. W. Sanders	34
Local Marketing—A. W. Puett	23	Creating a Market for Honey—C. H. Chesley	34
Ideas on Queen Breeding—Alois Alfonsus	25	Crop and Market	43
		Burr Combs—F. C. Pellett	50



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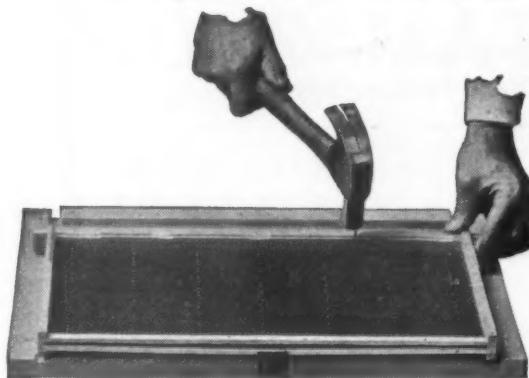
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HE LIKES THE JOURNAL

(We do not often publish the letters we receive from appreciative readers, but Mr. Pillman tells so plainly the things he likes about the Journal that it is helpful to us. What do you like?—Editors.)

Dear Editors:

In answer to your circular letter with regard to suggestions from the readers as to the kind of articles they like best, allow me to say that if I were to try to offer a suggestion as to the improvement of the reading matter that appears in the American Bee Journal, I would be at a loss for ideas, as I think that the articles that appear monthly in its pages could hardly be improved on. I admire the democratic policy of the American Bee Journal in giving Tom, Dick, and Harry of varied experiences a hearing. I think the letters of the oldtimers of the backwoods variety of expression, who may yet have something to learn in presenting their views in the language or the style of the day, are often more interesting than the letters of the professional whose style sometimes makes monotonous reading. Variation is the thing that makes the American Bee Journal interesting, and I compliment the editors of that Journal in delivering the goods. I will extend this letter further by saying that I like the size and form in which the Journal is gotten out. I think the present arrangement of editorial pages is pleasing to the eye, and that the reading matter which appears in that space is the most interesting of the issues. The crop and market report is another feature I like about the American Bee Journal, and I think M. G. Dadant, who compiles it, is well fitted for the job. I may not be qualified to pass on things literary, but these are my thoughts, and many others must think likewise, or the Journal would soon go "west" for lack of readers.

People like to feel that they belong to the gang and that they all, big and little, are working together for the good of the common cause.

With best wishes,
Geo. W. Pillman,
Centaur Station, Mo.

Laying Workers

A reader asks how to deal with laying workers. My answer is, never bother with them, they are not worth it. Break up the colony and unite with others. Another asks about moving bees a short distance. I say simply move them and don't bother about the bees which may be lost, as they are mostly old bees and of little value anyway.

Daniel Danielsen, Colorado.

Sturtevant Returns to Former Work

A letter from Washington advises us that Dr. A. P. Sturtevant, who recently resigned his position in the U. S. Department of Agriculture, has returned to take up his former work in the study of bee diseases at the Bee Culture Laboratory.

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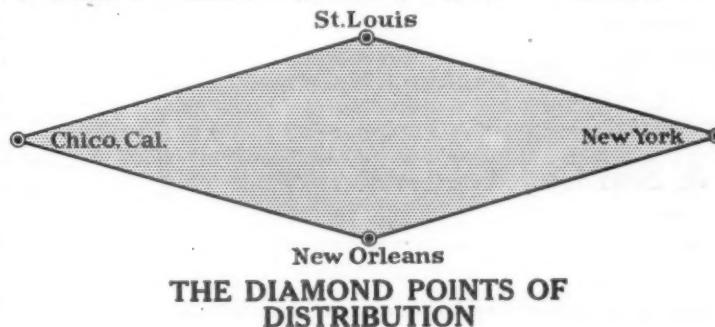
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FOR 1924

I have no bees with a pedigree, or queens with fancy names, or bees with extra long tongues; nor do I have a non-swarming race. I do not give an extra pound of bees with my nuclei, as they are well measured to start with.

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SMALL NUCLEI FOR QUEEN-REARING

A Letter from Charles Dadant to Edouard Bertrand, December 2, 1892.

I do not remember whether I ever wrote an article for your magazine upon the influence of small hives on the rearing of queens. But I have often written concerning the disadvantage of small nuclei, in which larvæ have neither the warmth nor the care necessary for a thorough development. The queen breeders used to have nuclei, the frames of which were only about 6 inches square, and they used only three of these frames in one nucleus. They placed some hatching eggs, and a handful of bees, many of which did not stay, in such a nucleus. The larvæ received neither proper warmth nor sufficient pap to develop them well.

But if we rear our queens in well-stocked, full colonies, even if we use nuclei for the latter part of their development, we may count upon good queens. The miniature hives of Alley's "Beekeepers' Handy Book", recommended on page 181 of his 1885 edition, for queen-rearing, did not suit me. He reared his queens in them, from the egg; but he later acknowledged to me that his queens were short lived.

We rear many queens artificially for our own apiaries, and I am quite sure that, by our method, they are improving in quality, especially when we select the breeders. We always begin the queen-breeding in full colonies and use nuclei only when the cells are about to hatch.

Chas. Dadant.

MANAGEMENT OF HEAT PRODUCTION OF THE HONEY-BEE CLUSTER

The director of the newly founded "Institut für Bienenkunde," at the Agricultural High School in Berlin, Prof. Dr. L. Armbruster, has written a new book, "Der Waermehaushalt im Bienenvolk" (published by Fritz Pfennigstorff, Berlin, 1923; 120 pages, 20 illustrations and 1 plate), which, based on the researches of Friedrich Lammert, seems to give at last the key to the wonderful management of heat production of the cluster of the broodless stock. The results are very astonishing and have value for practical beekeeping, too.

During the years 1894-1896 a very intelligent and reliable beekeeper, Fr. Lammert, at Sondershausen, made most careful and painstaking observations about the temperature of the bee cluster. In one case he read the temperatures from special kind of mercury thermometers every half hour during day and night (18 January, 15 February, 1896) through a whole month. Another graphical table of temperature-curves (16 May, 1894, 30 June, 1895) shows the thermometer readings through all

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the days of a year. I may mention that this table has a length of 8 meter 28 cm. and a height of 33 cm.

Lammert died in 1912, before this precious work of his life got real acknowledgment.

L. Armbruster was the first one who noticed the value which was hidden in these tabulated drawings; indeed an intelligence and scientifical profoundness of uncommon kind was necessary to dig out this treasure and to reveal all the consequences important to scientific and especially to practical purposes as Armbruster has done in this excellent work.

Before speaking of the researches of Lammert, Armbruster gives credit to the publications of Burton N. Gates and E. F. Phillips and G. S. Demuth about their studies concerning the temperature of the bee cluster (1914), and sets a great value upon them. He ascertains that Phillips and Demuth are the discoverers of the "critical temperature" of the bee cluster, and assumes that certain circumstances, which perhaps caused some disorder in the colonies, prevented them from detecting the law of the "Heizsprung" (heat jump), resting upon the tabulated views of Lammert, which were won under uncommonly favorable situations.

What About the "Heat Jump"?

As soon as the inward temperature of the cluster sinks to 13 degrees C. (about 55 degrees F.), totally calm bees are getting restless. The cluster shows uneasiness, the bees begin to hum, take up some honey, move about in short distances, breathe stronger, and suddenly the temperature shows a jump of 12 degrees C. and rises to 25 degrees C. (77 degrees F.). Now the "skin-bees" (the bees which represent the skin, the circumference, periphery of the cluster) crowd close together, to keep up the heat, and very slowly the temperature goes down again, and when the external temperature is about zero C. (32 degrees F.) it takes about 22 hours till the critical point of 13 degrees C. is reached again. Suddenly there is alarm again and the temperature is again driven up to about 25 degrees C., and so on during the whole winter, modified by external circumstances of different kinds or through internal influences. But it is quite impossible in a short review to go into details.

Armbruster gives in another chapter of his book the management of heat production during the summer, and in further chapters many questions and answers about the practical consequences of his deductions for beekeepers. This book is therefore very valuable for apiarists who understand German.

v. Buttler-Reepen.

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Glen Gardner, N. J.

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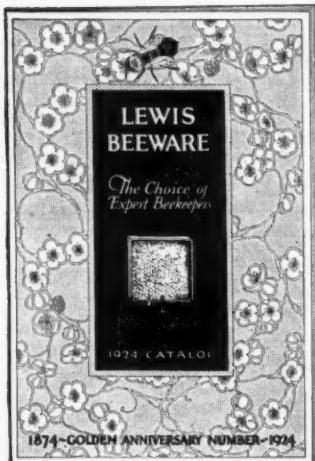
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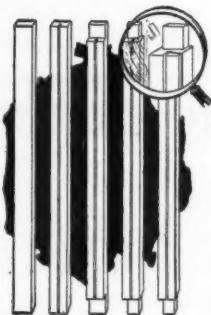


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AMERICAN BEE JOURNAL

VOL. LXIV—NO. 1

HAMILTON, ILL., JANUARY 1924

MONTHLY \$1.50 A YEAR

HIVES NOT TOO LARGE

By C. P. Dadant.

I read, not long ago, in an old bee book, that we **must not make our hives too large**; that there is a limit to the capacity of the swarm and that to hive a colony of bees in a large room or in the corner of a barn is a mistake, because bees can only gather a certain amount of honey, beyond which they cannot go.

This man reasoned correctly in asserting that a hive of bees has its limits and that it is out of the question, for instance, to have bees in a vast cave, filling it with honey, year after year, until it is full, as some Texas stories have reported in years past.

But the limit of a hive of bees should not be sought in the supers, which may be needed larger or smaller, according to the run of the honey crop. The limit of a hive is in the capacity of its brood chamber, allowing its queen to lay a number of eggs within the time when the bees which will hatch from those will prove useful in harvesting honey. We should not limit our hives to a population of 60,000 bees, as advised by a modern writer, for fear that they will swarm (Iches, *L'Abeille Domestique*, page 35). On the contrary, we must use all means to get the largest possible number of eggs laid, within the time when the bees produced from those eggs will have the best opportunity of harvesting honey. We have often shown that a good queen is able to lay an average of 3,500 eggs per day for a long time, during the breeding season, at the time when the bees are likely to become useful honey gatherers.

It is true that bees in very powerful colonies are inclined to swarm. But bees from a very prolific queen, in a small hive, are much more likely to swarm than a much greater number in a large hive, because they may be more crowded for space. I cannot do better than quote Mr. Langstroth, whom I have often quoted on this subject, as follows:

"Many hives cannot hold one quarter of the bees, combs and honey which, in a good season, may be found in large ones; while their own

ers wonder that they obtain so little profit from their bees. A good swarm of bees, put, in a good season, into a diminutive hive, may be compared to a powerful team of horses harnessed to a baby wagon, or a noble fall of water wasted in turning a petty water-wheel."

It seems pretty well recognized today that a colony should have enough cells for the queen to lay 3,500 eggs per day, during the active breeding season, and, in addition, at least 25 to 30 per cent more cells for the cur-

the brood of a good queen, with sufficient supplies.

Dr. Miller used 16 frames, in two 8-frame stories, for breeding in early spring, removing one of these stories entirely when the crop began.

The present tendency is to use two 10-frame hives, or 20 frames, for brood chamber. My experience goes to show that this is too much. Our hives must be large enough to accommodate the best queens, but they must not be too large, in the brood chamber at least.

I propose to tell here of my experience. But it may be as well to speak first of some experiments by others.

Since the question of large hives was revived by the activity of Mr. Pellett, who urged the spread of our system, after having tried it in our apiaries, many experiments have been made. Mr. G. H. Cale, who is now with us also, helped in some experiments made at the Department of Entomology apiary, at Washington some years ago. He tells me that, with some 75 colonies in two-story 10-frame hives, they found one colony whose queen filled an average of 14 combs with brood scattered in the 20 combs. The balance of the colonies filled an average of 11 frames with brood. Adding three combs to each of these, for the supplies of pollen and honey necessary, we reach only the number of 14 combs, as required. Even the one best colony which filled 14 frames with brood, would not have needed much more than the 16 frames of Dr. Miller's method.

We began large production with 8-frame Quinby hives, the contents of which were about equivalent to 10-frame Langstroth hives, since the combs are both deeper and longer. We then made 10 and 11-frame Quinby hives, the latter being now called Dadant hives. As these did not prove too large, and as we happened to buy some 20 odd 20-frame hives, we concluded to experiment with the latter. These 20-frame hives, Quinby size, were not intended by their builder to be used for single colonies. He had conceived the

rent supplies of honey and pollen needed to feed this brood.

The ordinary Langstroth standard frame contains about 7,500 worker cells, if these are regularly built. It is thus evident that the 10-frame standard hive contains about 75,000 cells, or only room enough for the breeding of a good queen, if every cell was filled, without the necessary space for the pollen and honey required for their daily needs. Our personal tests, made upon hundreds of colonies in different sized hives, showed us that not less than 12 Langstroth frames are necessary for

idea of making economical hives, in which he put partitions and meant to use them for 3 or 4 swarms each. But this man was a dreamer, and he soon gave up in disgust. When we bought him out, we knocked the partitions out of his 20-frame hives and thus had what would now be called "long-idea" hives, intended to be in a single story, for both honey supers and brood chamber. This "long-idea" was long ago originated by a Kentucky man who claimed better success than with storified hives. Here was a chance to try his method, as well as to make sure of a queen's capacity to lay in a vast brood chamber.

Well, our twenty odd colonies did not give us satisfaction. There was too much room for the queen. The Quinby frame contains some 10,000 cells. A 20-frame hive gave us 200,000 cells, room enough for a large amount of surplus. But the trouble was that this surplus found itself mixed in with combs of brood or, worse yet, in some cases nearly every comb had some brood and some honey. The honey had to be extracted from brood combs or too much of it left in the hive for winter. Besides, the space was too great for the bees to winter. Every fall we had to reduce the colony to about 9 or 10 combs. These surplus combs were much more difficult to care for than regular supers. Hence, the necessity to do away with those **too large** hives; since keeping two colonies or more in one hive was never to our liking.

We tried to put supers, small glass boxes, in two tiers, on the ends of those hives, in place of frames. This method of side supering was suggested by a very old beekeeper, Jasper Hazen, on page 41 of the American Bee Journal, for 1870. But that method, which he evidently had never tried himself, did not work. We found, in practice, that the bees would never put surplus honey in the lower tier of those boxes, for their

instinct is to put the honey above the cluster, in a place of easy access away from the danger of robbers or moths. The only alternative was to cut down our large hives to 10 and 11 frames, Quinby size. We did.

This was not the only trial we made of **too large** hives. We had occasion, about 1876, of taking care of a large apiary of 10-frame Langstroth hives, owned by an old beekeeper by the name of Barlow, who had been a peddler of movable-frame hives, but had neither the ability nor the strength to take care of his bees. His hives were portico hives, old style Langstroth, with the regulation spacing of a scant 1 1/2 space between frames, from center to center.

When we placed these hives side by side with our 10-frame Quinby hives we found, in early spring, that the Langstroth hives were ready to swarm by the opening of fruit bloom. They did not have enough room for a good queen to lay. They were running over with bees and actually appeared to be more successful than the colonies in our large hives. But when we added supers, half stories, they were filled with brood, in the Langstroth hives, while the large hives hardly needed them until the crop was on. When the time for the crop came, however, the colonies in 10 large deep frames got easily ahead of those in the Langstroth hives, because they had bred more uninterruptedly, for the crop.

The following year, seeing a recommendation of two-story ten-frame hives, we manufactured about 40 of those plain 10-frame hives, to use on our portico Langstroth hives. The result was that, in many cases the queens moved from the lower story to the upper, and stayed there, but often there would be more or less brood in both. This gave us conditions in which our hives were neither brood chambers nor supers, but both or either, indiscriminately.

Our conclusion was that we must limit a brood chamber to the capacity

of its queen. By doing this we are sure to get the brood in the brood chamber, and the honey in the super. It is true that there are exceptions, that some of our queens, even in the large hives, will move to the super, especially if there is, in that super, a proportion of drone comb. The queen seeks for drone comb, at a certain time of her laying, each spring. Dr. Miller called my attention, in the apiary, years ago, to a fact which I had noticed, but upon which I had failed to ponder, that the workers often leave drone comb empty, while they fill worker combs around it, with honey, in the super, when the queen has no drone cells in the lower story. The queen seeks for drone cells at that time.

Why is it that the queen seeks for drone cells? Some beekeepers would have us believe that she knows that the eggs which she is about to lay are drone eggs. Huber wondered whether it could be that she knew, and he tells how some country women, who heard the statement made that a queen could tell the sex of her eggs before they were laid, protested that it could not be possible for a little insect to know that; when they, human beings, were entirely unable to know beforehand the sex of their progeny.

We now know, through parthenogenesis, that the eggs which are to produce drones are not fertilized, as they pass out of the ovary by the spermatheca, while the worker eggs are fertilized from that spermatheca. My father held a view which I have never seen successfully contradicted, that when the queen is fatigued by the constant laying of worker eggs for months, and the pressure of the spermatheca at each laying, which perhaps gives her a certain amount of sexual pleasure, she seeks for cells that are large enough so that she may let the eggs drop without pressure of the spermatheca. Thus would come the explanation of the fact that the queen seeks drone cells and evidently manages to make it known to the bees.

Dropping this digression, I wish to state that a queen, in a large, deep brood chamber, will rarely leave it to go into an upper story, unless there are drone cells there. If she does go up into it, she will be less likely to stay there, if it is a very shallow story, than if it is a deep one. This is my experience, not on a few colonies only, but on hundreds, for years in succession.

The **too large** hives, 20-frame Langstroth or 20-frame Dadant, whether in one story or in two stories, proved much less convenient to us than those where the brood chamber is in a single story; because in the one, the honey that could really be taken as the beekeeper's share was more or less mixed with brood, and because the queen was likely to roam much more than in ample single stories, **not too large**, with half story supers.

Now, as to an ample supply of honey for spring breeding; a store of



Successful roadside selling station for honey.

honey which one of our most capable contemporaries calls "automatic feeder"; I consider a second full story of Langstroth combs, 10 frames, as too ample. It happened with us, a number of times, that so ample a supply of honey did not get consumed during the spring days. The result was that the bees filled the combs with clover honey, when the crop began, while these combs still had some fall honey, amber honey, left. The 10 or 11-frame deep hive contains ample honey for all emergencies, if it has been properly filled, the fall previous, by the bees. This, also, we have tested fully.

Confirming our experience, Mr. Langstroth wrote us, in the last years of his life: "I am so well persuaded that the large hives are more profitable, in Oxford (his home town), for extracted honey, that just before my last spell of head trouble, I purchased two of these large hives (13-frame hives), well stocked with bees, for my own use."

This simply confirms the argument of Charles Dadant, who was the first, I believe, to put the question in this way:

"The number of frames to be used in a hive depends on their size; for we should manage our bees as we do our domestic animals, and give them as much space as is necessary to obtain the best results. What would we think of a farmer who would build a barn without first considering the number of animals and the amount of feed which he intended to shelter in it?"

However, hives that are too large in the brood chamber are almost as objectionable as hives that are too small. Such hives are more difficult for the bees to keep warm and their entire room is unnecessary until we find the crop of honey coming. The amount of room for the honey crop is quite another question than the amount of room for breeding and wintering. The supers should be numerous enough and elastic enough, so to speak, to hold small or large crops, according to the circumstances, the yield and the duration of the harvest.

Let me close by stating that I do not desire to urge anyone to change his hives and his system. It is too expensive; besides, many men succeed with smaller hives and frames. All I desire is to make it evident that there are fundamental reasons for making brood chambers of a certain size. After giving our testimony regarding the proper size of brood chambers, in our revision of Mr. Langstroth's book, "The Hive and Honeybee," testimony based upon many years of practical work with hives of different sizes in large numbers, we allowed the matter to rest.

But when Mr. Pellett, who is now with us in the publication of the American Bee Journal, and who kept bees on a large scale in Iowa, saw our system in practice, he was so highly pleased with it that he insisted upon bringing the large hive again before the American public. He

did so, in a number of meetings. The upshot of it was a general enquiry into our methods and the publication of the "Dadant System of Beekeeping." It is not only in this country that the system has been discussed with favorable comments, but also in Great Britain, and generally where

movable frame hives are used, for our system was very widely adopted in Europe, where we were the first to bring the modern top-opening movable-frame hive, which represents the progressive system of the present day.

DIRECT MARKETING OF HONEY

By F. B. Paddock.

The best method of disposing of a crop of honey has been a problem seriously confronting Mr. R. J. Coon, of Ames, Iowa. In years passed Mr. Coon has relied almost entirely upon house to house canvass. This has been more or less successful, but it requires a great deal of labor and has not been altogether satisfactory.

This year, just as soon as the honey was off, Mr. Coon erected two honey selling booths. One of these was located not far from the apiary, and is on one of the main traveled highways through the state. The other booth has been erected just at the edge of town on the Lincoln Highway. Both of these booths are neatly constructed and are attractive to the people on account of the slogans which are painted on the outside. Considerable honey is on display at both of these booths in all sizes of containers.

In the early season, the only commodity handled was honey, but as melons came on they were sold, also, and as the melon season passed out, chickens formed adjuncts to the honey selling business. It is hard to pass either one of these booths and not see some customers in the process of buying honey. A good many of these purchasers are tourists on the Lincoln Highway, especially, so that almost half the states in the Union are represented in his customers.

Through this method of selling honey, Mr. Coon has been able to dispose of his crop before October 1. This is much better than has ever

been done before, and it has been much more satisfactory to dispose of the honey in this manner. The full value from this method of honey selling probably does not come the first year. Since such a large per cent of the customers are out of state visitors, it is only to be expected that next year Mr. Coon will receive a good many inquiries by mail for honey from the people who purchase this year. This illustrates clearly again that honey can be moved rapidly, satisfactorily and at a good profit if the proper system is employed.

Maricopa Best Arizona County

Statistics compiled by local beekeepers show that Maricopa County leads the entire state in the value of bee products produced and sold during the past year. Of the total value of \$217,976 produced over the entire state, Maricopa County contributed bee products to the value of \$107,203.

Yuma County is second with a total production value of \$33,206, while Coconino is lowest with a production of a few hundred dollars' worth of bee products. Beekeepers declare that the hives of the entire state are singularly free from disease, there being only a few districts that are infected with "foulbrood," and that the disease is being rapidly eliminated.—Arizona Republican.



Selling melons and honey by the roadside.

AMERICAN BEE JOURNAL

Established by Samuel Wagner in 1861

The oldest Bee Journal in the English language.
Published Monthly at Hamilton, Illinois.

Entered as second-class matter at the Postoffice at Hamilton, Illinois

C. P. Dadant Editor
Frank C. Pellett Associate Editor

Maurice G. Dadant Business Manager

Subscription Rates: In the United States, Canada and Mexico, \$1.50 per year; five years, \$6.00. Other foreign countries, postage 25 cents extra per year.

All subscriptions are stopped at expiration. Date of expiration is printed on wrapper label.

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THE EDITOR'S VIEWPOINTS

GRAPHOLOGY

This is not beekeeping, friend reader, but it concerns a leading beekeeper of Europe, Mr. Crepieux-Jamin, who was for a time associate editor of the *Revue Internationale D'Apiculture*, then published in Switzerland. Mr. Crepieux-J. is a noted graphologist, that is to say, he studies and teaches the science of estimating character and individuality through handwriting. We all know that a conceited, noisy man writes a very large hand, usually, and that a modest man writes very carefully and concisely; also that an old man shows his age by the unsteadiness of his hand. Well, there are many other rules concerning graphology. Mr. Crepieux-J. has written a dozen works on that science and some of them have been published in French, English, Danish, German and Spanish.

We are now in receipt from him of a complimentary copy of a work on "The Elements of the Handwriting of Rogues," which is a very interesting work and full of information. I believe, however, that not one person in a thousand is capable of assimilating the directions given to recognize character in handwriting; and most of us had best stay with the little honeybee. She can always make us understand her moods and we readily comprehend when she is happy and when she is sad, when she is at peace and when she is angry. Her song tells it. Graphology is a similar science just as unknown to us as the meaning of the song of the bee is to the average honey consumer who knows nothing about bees, but enjoys eating their products.

LAYING WORKERS

In view of the fact that many beekeepers believe that laying workers are more or less like queens and do not fly abroad, it is interesting to read the remarks made by that active experimenter, Mr. Perret-Maisonneuve, recorded in "L'Apiculture Francaise" for November, page 297. He writes:

"As a sequel to the article from me which was published in the September number, I believe it is well to state that, on the 20th of September, 1923, having given to the bees, at a distance from the apiary, a receptacle which had contained honey, so they might "lick" it clean, I noticed among them one of the drone-laying workers which I had marked on the thorax with yellow paint, in July. So she had gone out as a field worker. I had made reservations, in my previous statements upon the question of whether drone-laying workers, which go back into their duties in a normal colony, assume again their previous functions, including that of field work. This last observation corroborates specially the hypothesis that the laying workers, living in a normal colony, again assume the position of ordinary workers."

This is of importance, in the presence of statements to the effect that, if the bees are shaken out of the hive, at some distance from the location occupied by it, the laying workers do not return. An observation of this

kind is reported in the *British Bee Journal*, November 13, page 464. But the experimenter, in that case, placed the eggs and bees in the old hive on a new spot. In this case the laying workers did not return, but "remained upon that comb with a handful of bees, as if a queen were present."

The writer of that item, C. Hogan, suggests that, "had the bees been shaken out of the hive, and no comb left, there would be a risk of the laying workers remembering their old location or following the rest of the workers back."

These matters are of importance in doing away with the annoyance of laying workers, and Mr. Perret Maisonneuve is to be congratulated upon his interesting observations.

SWAPPING IDEAS AND INFORMATION

We lately received a long article with the above colloquial heading, urging the exchange of ideas. Yes, of course, swapping views, learning from one another, new methods, short cuts, etc., is a very good thing; provided neither you nor the other man objects.

I remember, once in the long ago, hearing a farmer ask of a butcher what was the best way to pickle pork in order to preserve it well. The butcher who had learned his trade in a pork house or slaughter house, replied with a frown: "I once spoke a few words that enabled a man to make several hundred dollars of profit, but I am not inclined to make the same mistake again." The farmer replied good humoredly: "If I knew words that could enrich people several hundred dollars, I would surely scatter them around."

So it is; some of the people are willing to teach or to learn, others jealously preserve what they have learned and try to keep others from learning it, for fear of competition. Which is the better course?

I believe people are becoming less selfish, for conventions are every year more numerous. Most of our people realize that we all have to gain from "swapping ideas and information."

A NEW MARKET FOR HONEY

We have been publishing articles dealing with the use of honey as an anti-freeze solution for auto radiators. There are many reports which indicate that honey can be used for this purpose with entire satisfaction. If this be true it is well that the beekeepers publish the facts as widely as possible. So many autos are now in use that should honey come to be generally used for this purpose it will consume the entire surplus and create a demand for thousands of tons of honey. The poorest quality of honey is as good for this purpose as the finest product and can thus be removed from competition with the better grades in the market.

WISCONSIN ACTION

The arrangements made by Wisconsin beekeepers to run a honey booth at the Wisconsin Products Exposition are worth noticing. If every State Beekeepers' Association would do similar work, honey would not drag on the market. There would not be enough produced to fill the orders. Let all our State Associations take some such action.

AMERICAN HONEY PLANTS

We have made it a rule not to give any praise to our own productions, in the reading pages of the *American Bee Journal*, but we must make an exception in the case of "American Honey Plants," because we believe it is a very useful book, recognized as such by every one of those who have used it as reference.

The new edition of this work of Mr. Pellett has nearly a hundred pages more than the first edition, 194 illustrations instead of 155, and is in every way better than

its predecessor; though the first edition was praised by many.

A valuable feature of the work is the mention of every popular name given to a plant or a tree, in addition to the scientific name. This is better than the method of some writers who give only the scientific name of a plant or even of an animal. For instance, no one who is not a scientist would know that, in the valuable French work on venomous animals, mentioned elsewhere; the rattlesnake is described, for it is given only as "*Crotalus horridus*," a name unknown to any but students.

An evidence of the ease with which anyone can find the description of a plant, lies in the fullness of the index of "American Honey Plants," which fills 12 pages, in the new edition.—C. P. D.

METAL COMBS IN ITALY

L'Apicoltura Italiana publishes 14 reports concerning the metal combs of which they sent a number to be tested by beekeepers. Of these 14, 9 report negative results, 4 partially successful results, and one only fully encouraging results. But if we are not mistaken, the trial was made upon full depth cells. It is now very plain that the only possible success is with metal combs of half depth cells. Success appears also much more positive in warm countries than in localities with cold winters.

The editor of that magazine complains that not enough reports have been sent in. He would like to have reports from every man who tried these combs. How is it with our beekeepers in this country? We rarely hear of their experience with the metal comb, whether full combs or "semi-comb" as the half depths are called in England, where the semi-comb seems to give good results.

BEEKEEPING BY WIRELESS

The "Radio," a weekly magazine of Lausanne, Switzerland, gave a radio-talk, at Lausanne, September 19th, concerning the book of Mr. Perret-Maisonneuve, on queen-rearing, indicating the usefulness and simplicity of the Perret-Maisonneuve method for queen-rearing. L'Apiculteur, which mentions this, states that this is the first time that wireless has been used for beekeeping information. But we believe that it has been used already for several talks in this country.

SOUTH CAROLINA BEEKEEPING

Our editor, in January 1921, attended bee meetings in New Jersey, Virginia and both the Carolinas. In South Carolina he found great willingness and was welcomed heartily by Dr. Conradi, at Clemson College, and by Mr. E. S. Prevost, who was in charge of Extension in the Piedmont country. We now learn that this same gentleman has entertained the beekeepers of Anderson and other counties, December 7, with a motion picture of the "Honeybee at Work."

The efforts made by Mr. Prevost and others are not to increase the number of beekeepers, but to educate those who keep bees, in the proper methods of beekeeping and prevention of diseases. These efforts deserve recognition and commendation, as well as support from all who are interested in the production of honey.

QUEENS AND QUEENS

Our contemporary, the British Bee Journal, in its number for November 29th, gives a cartoon representing the question mark: Can a queen produce 6,000 eggs per day? The editor then asks whether there is anything in the claims of "those extra prolific queens bred in America," and whether the colonies of those queens "deliver the goods."

We do not believe that anyone can truthfully say that a queen exists that lays 6,000 eggs per day. Although

that matter has been freely discussed in Europe, we would not give it room in our columns. There are extraordinary statements made everywhere, which cannot be accepted by people of sound judgment. America is responsible for big "fish stories," but those stories are not accepted otherwise than as jokes. We trust our English contemporaries found this out.

MISS EMMA WILSON

In our December number, we made mention of the eye troubles of Miss Emma Wilson, Dr. Miller's sister-in-law, who once used to edit the "Beekeeping for Women" section in this Journal.

Miss Wilson is now much better. Here is a letter from her sister, Mrs. Miller, telling us of it, and we want our readers to enjoy the news and have a "Happy New Year" wish for Miss Wilson.

December 10, 1923.

Dear Mr. Dadant:

Emma has improved ever since she returned from the hospital, four weeks ago today.

It is perfectly marvelous the way her sight is returning. She is now able to read quite fine print, but of course does not use her eyes more than a minute or two at a time.

Tell Maurice we enjoyed "Burr Combs" hugely, especially the part regarding the new baby. I have read it over and over, and we have laughed over it. Emma says it is a mighty pretty name anyway.

With kindest regards to the Dadants,
Sidney J. Miller.

DECEMBER MEETINGS

The editor attended meetings at Springfield and Chicago in the early part of the month, and at Minneapolis the week following. It is very evident that beekeepers are more interested, now, in increasing the demand for honey than in any other subject, even though the quantity of honey on the market is likely to be insufficient for the remainder of the season. Honey is not high enough in price and the beekeeper is usually to blame for that, as he does not seek to protect the retailer.

This matter was made very plain by that forceful speaker, E. G. LeStourgeon, of Texas, who was put upon the program at all three of the meetings above mentioned. LeStourgeon knows how to retain the attention of the audience. It is interesting to hear his arguments on the entire lack of "sale resistance" in honey, thereby meaning that, if the customer knows the honey offered to be pure, he will be naturally attracted by the word "honey." LeStourgeon reminds his hearers that our mothers called us "honey" when we were babies, that we called our sweetheart "honey," when we courted her. Why? Because honey represents all that is sweet, good, wholesome. Therefore, there should be no "sale resistance" to honey. It ought to sell as readily as the best candies and at equally remunerative prices, if we only understand how to put it on the market.

Another popular man at those meetings, was Winkler, the Hubam sweet clover man. Winkler is a plain man, but he knows his subject. He is ready to answer any question on Hubam. He does not grow it himself, but he does better than that. He gets all the farmers in his vicinity to grow it, and they are pleased with it, as a hay crop, as a fertilizer, as a seed crop. And he shows you that it is also a good honey producer, by the best argument of all; for if you call on him, at his home, he will show you hundreds of cases of sweet clover honey, gathered by his own bees. Nothing convinces one like the sight of successful production. Evidently Hubam sweet clover is desirable. The only trouble is that we have not yet praised it as much as it deserves.

WHEN TO PLANT SWEET CLOVER

Winkler says: Plant Hubam clover as early in the spring as possible, the earlier the better. Do not try to preserve it for the following year, since it has bloomed; if any of it should show vitality, better plow it under and sow it again in spring. He figures that about an acre of Hubam will keep a colony busy in the honey season.

HOW THE SHIPPER CAN CO-OPERATE WITH THE RAILROAD TO SECURE A LOWER FREIGHT RATE

By Robert C. Wright, General Traffic Manager Pennsylvania Railroad.

MUCH has been said on this subject by the shippers and the carriers, and the response on the part of the former has been so sincere and active that there is not a railroad man today who is not apprehensive of, and grateful for, what the shippers have done to help the carriers meet the national emergency in the demand for transportation.

The word "co-operation" is too often abused, and, unfortunately, it is understood by some to mean that "one fellow will do the sawing and the other fellow will do the grunting," so that the meaning of equal effort should be clearly understood before the word is used in any discussion.

It can, I believe, be stated—with out fear of contradiction—that the railroads do not like "high" rates just for the purpose of securing a high price for the commodity they manufacture, namely, "transportation"; but they must secure a price that will assure them sufficient net earnings to properly finance their properties for the needed expansion and development of their plant. Every effort toward intelligent economy in operation is being exerted by the carriers, but under existing regulative methods the scope of such efforts is more or less limited, so it is a fact that in the hands of the shippers lies the power to materially help towards a decrease in the expense of operation, by which alone can a lowering of rates be accomplished without serious detriment to the transportation facilities of the country.

While the various opportunities for help on the part of shippers have been repeatedly brought to their attention, it may be worth while to mention some of them in detail:

1. The shippers can conserve cars, and increase their earning power, by loading them as near as possible to capacity. Some of the minima required by railroad tariffs are much lower than can be loaded in the cars, and it is the belief of the carriers that to arbitrarily increase the minima it might involve numerous hardships, and would not, on the whole, be as effective as an earnest desire to help along these lines on the part of shippers.

Request for "co-operation" along this line, therefore, is to put it in the hands of the user of transportation in order to effect this economy, rather than to force it upon him by tariff publication.

2. The prompt loading and unloading of cars is another means by which the efficiency of equipment can be greatly increased. Here, again,

it might be possible for the carriers to lessen the free time, or to increase the penalties for detention; but it seems wisest to avoid the use of force and rely upon shippers and receivers to exert their utmost effort to prevent unnecessary detention of railroad cars.

There are two sides to every question. Much complaint has been made because of high freight rates and we have asked a well-known railroad official to tell the shippers what they can do to assist in securing lower rates. In this article Mr. Wright gives some hints which, if generally followed, would reduce the amount of freight claims and unnecessary expenses of the carriers. He also states the case for the railroads by telling of some of the difficulties under which they are operating.

The public is suffering from excessive rates while at the same time the carriers have troubles of their own. If we can co-operate toward the removal of the difficulties both the public and the railroads will profit thereby.

3. Careful marking and adequate packing of shipments for transportation will do much to reduce claims. There is no waste of money in railroad operation so absolutely useless as payments for loss and damage, and the saving of claim payments is a railroad economy which makes for better service.

These three items are the outstanding channels for "co-operation", but there are numerous smaller ways arising from day to day which, with a favorable attitude in the minds of the users of transportation, could be handled in such manner as to avoid increasing the amount of labor necessary to produce a unit of transportation.

Perhaps we look at this question of "cooperation" between shippers and carriers in too finite a way, and that the real thing is the correction of unfair sentiment against the carriers in general; avoidance of punitive and onerous legislation and a release from some of the restrictive regulations so that railroads might be allowed to work out their problems with greater freedom of action.

When the shippers and all users of transportation have once accepted the indisputable fact that the prosperity of this country depends direct-

ly upon the prosperity and efficiency of its railroad systems—and when actuated by this belief they not only themselves demand, but encourage their neighbor to demand, an absolutely fair treatment of the carriers—then the greatest "co-operation" will be given towards economy of operation.

It is to be feared that few people realize that, while in recent years the great economy open to carriers was to increase the volume of business so as to decrease the overhead, now, as the expansion of the carriers has been stopped and their financial health impaired, this situation has changed to the extent that every effort must be exerted to carry the traffic offering, and that, unless the plant can be materially increased, the economy of reduced overhead has been lost as a possibility.

Let us view it from another angle. The control of the destinies of the carriers is largely in the hands of public commissions, who are the servants of the people of the United States. When the people of the United States so desire, they can secure an attitude towards the carriers which will be a move in the proper direction. Everyone knows the old nursery tale of the "pig that wouldn't get over the fence" and the various efforts made by its owner until the "cat began to kill the rat, the rat began to gnaw the rope, the rope began to hang the butcher, until at last the dog began to bite the pig and the pig got over the fence." Doesn't this illustrate what would happen if the public demanded fair treatment of the railroads? The railroads would begin to get back their financial strength, the financial strength would permit them to adequately maintain and increase their plant, the increased plant would enable them to carry more traffic, the greater volume of traffic would result in less expense per ton, and the less expense per ton will bring about reduced rates.

In other words, isn't it time to go to the bottom of the trouble, and while not omitting the "salve on the surface", weed out the germs which can never be cured except at the source?

RECIPES CALLING FOR HONEY

From a Consumer's Standpoint

By Luella B. Lyons.

Our local grocer was expecting the usual quietness in business during the days following the holidays, so he began to look about for some special trade pullers. However, he did not look in the direction of the man that supplied his store with honey. For that very reason the bee man came to him and suggested a way in which his product might figure as the principal factor and would also call for several other products that the grocer might sell.

The grocer did not immediately

fall for his plans, but expressed his willingness to give it a trial. Cardboard advertisements took up a corner of the store space which could be utilized and this was the very space the bee man had figured in his plan. The grocer consented to having it cleared and tables put in the space. The grocer, however, was surprised to see the electrical dealer of the town install an electric stove with an oven near the window. The oven of the stove was glass and this was placed so that it might be viewed from the window. The electrical dealer was furnishing the current and the stove just as an advertisement from his store, and a huge sign proclaimed this fact to the public, and which later made him several sales.

The newspapers and circular letters to every family in the community announced that there would be a honey exhibition in the baking line at the Roberts Grocery at certain stated hours. An expert baker was hired to do the demonstrating. She mixed the ingredients before their eyes and put the cake or cookies in the oven before them and they might remain to watch it bake. The previously baked ones were being cut and divided among the crowd.

With the purchase of honey and the other ingredients with which to make up these already demonstrated recipes, three typewritten sheets containing these three recipes were given away. The recipes had been mimeographed on very durable stationery and were passed out with the package. These are three recipes which were so gladly tried by those who had attended the demonstration and had sampled the products:

Honey Cookies

$\frac{1}{2}$ cup Crisco.
 $\frac{3}{4}$ cup granulated sugar.
 $\frac{1}{2}$ cup honey.
 Grated rind of one lemon.
 1 egg and 1 yolk.
 3 cups of flour, or more if necessary.

4 teaspoonfuls baking powder.
 1 teaspoonful almonds.
 1 egg white and sugar for glazing.

Beat Crisco to a cream and gradually beat in sugar and honey, add lemon rind, the egg and yolk, beaten together, and the flour sifted with the baking powder and salt and mix to a dough that may be kneaded. More flour may be required. Knead a portion of this dough on a floured board, roll into a thin sheet and cut in rounds; rub over the baking pan with Crisco and place the cookies therein and brush them with the egg white reserved for that purpose and slightly beaten, then sprinkle with the chopped nuts and dredge with sugar and bake to an amber color.

Honey Fruit Cakes

4 cups flour.
 $\frac{1}{2}$ cup butter.
 $\frac{3}{4}$ cup honey.
 $\frac{1}{2}$ cup apple jelly.
 2 eggs.
 1 teaspoonful soda.

1 teaspoonful powdered cinnamon.
 1 teaspoon nutmeg.
 $\frac{1}{2}$ cup of raisins.
 $\frac{1}{2}$ cup of currants.
 $\frac{1}{2}$ cup of chopped candied orange peel.
 $\frac{1}{4}$ cup of warm water.
 $\frac{1}{4}$ teaspoonful of salt.

Warm butter, honey and apple jelly; remove from fire, add eggs beaten, the soda dissolved in warm water, add spices, flour and fruit. Turn into buttered tins and bake till done.

Honey Drop Cakes

$\frac{1}{2}$ cup of shortening.
 $\frac{1}{2}$ cup of sugar.
 $\frac{1}{2}$ cup of honey.
 1 egg.
 $\frac{1}{2}$ tablespoon lemon juice.
 $1\frac{1}{2}$ cups of flour.
 1 $\frac{1}{2}$ teaspoonfuls baking powder.

Cream shortening and sugar slowly; add honey, beaten egg yolk and lemon juice; mix well and add flour and baking powder which have been previously sifted together; fold in beaten egg white. Put into greased and floured individual tins or muffin tins, or they may be dropped from the tip of the spoon upon a baking sheet, and bake in a hot oven for 10 to 15 minutes.

The grocer derived a very large sale for not only honey but the other ingredients that these recipes called for and he confided to me, he gained customers to his store that had never entered his doors before. The town, in general, were all eating honey cakes. The electrical dealer, the grocer, the bee man, the newspapers and the postoffice, and last but not least, those who had been hired to give and conduct the demonstration, had profited thereby, but the grocer and the bee man still continue to reap the interest from such an investment.

NOTES FROM BRITISH COLUMBIA

By J. W. Winson.

The lower Fraser Valley usually produces as much honey as the rest of the provinces of British Columbia, and in average seasons may yield a 150-pound surplus, but the 1923 crop will be less than a third of this.

Such a result is contrary to expectations. Willow and maple began with abundant offerings; dandelions and fruits in orchard and bush followed bounteously, and supers were stacked with confidence for the "fireweed" flood—but the fountains did not flow.

Colonies with surplus at the beginning of July lost weight as the month proceeded, and many unfortunates who stored nothing in spring were dependent on their owners before autumn came.

Excepting in the Delta regions, where alsike predominates, fireweed is the chief factor in honey production in the coastal region of this province. The "lopped-off" lands and low meadows are rich in shrubs and

hardwoods. Every farm has its "berry patch," and orchard; commercial "berry ranches" (chiefly raspberry) are frequent. All these, with careful "building up," can be made contributory to the final total, but the blended result is mainly fireweed in bulk.

The failure of the fireweed is ascribed to untoward conditions in the growing season. It is suggested that the nectar flow is decided by the ability of the plant to store surplus food when the leafage is produced, and if cold or wet intervenes at that time little nectar will be secreted when the bloom opens. In other words, should there be a shortage in sun or soil at the growing season, the first economy made by the plant will be in its gratuities to the visiting insects.

A curious confirmation of this theory was noticed here. On the north bank of the river, in the Missions district, the ground rolls in sunny slopes to the water's edge. On these favored benches the spring growth had no check, and from there to Agassiz, where the conditions were similar, crops above normal have been harvested.

No flower claims separate distinction of flavor in the honey from this Fraser region as a rule. The delta apiarist may get his super of clover; the "highlander," by careful manipulation, may rescue a clear culling of the maple (*Acer macrophyllum*), and others have claimed isolation of the most reliable cascara, or buckthorn (*Rhamnus Purshiana*), but in ordinary seasons, with ordinary beekeeping, one bloom follows or runs concurrently with another, from the willow to the goldenrod, and the honey is a resultant blend which flattering visitors affirm to be beyond compare. But this blend is not the best of candied honeys, the granulation being imperfect in hardness and whiteness. This odd year, however, has confirmed the opinion of several shrewd apiarists that acid-fruit honey granulates better than that from herbaceous plants.

Hives near the raspberry fields made early surplus this season, some beekeepers taking off over a hundred pounds before the end of June. This raspberry honey went solid in a few days—very hard and beautifully white.

Where it was left in the combs in the vain hope of a later crop joining it, the cells candied solidly, beyond extraction. Where a power machine was used, the "candy" was driven out in solid pellets, hexagonal as the cells.

In view of future business, when a discriminating public has been educated to the virtues of granulated blocks, this discovery may be of great value, and it may prove profitable to "run" for the raspberry flow and specialize on the solid advantages of this fine-flavored variety.

BEEKEEPING IN LOUISIANA

Opportunities and Difficulties of Honey Production in the Bayou State

By Frank C. Pellett

LOUISIANA folks are a modest lot. They do not advertise to the world the natural attractions of their state. Louisiana is perhaps less known to the world at large than any state of equal resources. Louisiana has a large area of very rich soil, a mild climate and an abundant rainfall, a combination which insures success in crop production. It is true, of course, that there are serious drawbacks there, but this is true elsewhere as well. The boosters of the west who proclaim to the world the matchless attractions of a particular region always overlook the drawbacks in their advertising.

I am a country-minded individual and having lived the most of my life on the farm, I am always attracted to the things of the soil. Green grass, fat cattle and luxuriant crops claim my attention wherever I may be. In all my travels I have seen no richer soil or greater agricultural possibilities than are offered in Louisiana. With one-half the effort that has been expended to boom and develop California, Louisiana would be the garden spot of America. When I say Louisiana, I mean the better portion of that state, for there is a large area of very poor land which is covered with pine or oak and hickory timber. It is to be hoped that this region will always be kept for the purpose for which the Creator evidently intended it—the growing of trees. America is already suffering from the misguided efforts of those who have cut the forests from such lands without providing for re-forestation. A crop of lumber is as essential to the prosperity of the people as a crop of cotton or corn, and takes a lifetime instead of one season to grow it.

Louisiana has one big and outstanding problem, the problem of drainage. This is too big a thing to be worked out by individual land owners, but must be solved by the establishment of large drainage districts. Much of the state is only from 15 to 60 feet above sea level.

Thousands of acres are covered with swamps and bayous and other thousands of acres, which are dry a part of the time, are under the constant threat of overflow. Once drain this land and remove the danger of floods and it will be difficult to estimate the tonnage of crops which might be produced. When we remember the wonderful country that Holland has become, in a region which actually lies below sea level, it is plain that the drainage problems of Louisiana are not insurmountable. Under present

state are largely dependent upon the nature of its agriculture. With few exceptions, the regions where big honey crops are the rule are where some important honey plant is grown as a major agricultural crop; as is the case with alfalfa in Colorado, sweet clover in North Dakota or alsike and white clover in the dairy sections of Wisconsin and Iowa.

In Louisiana it seemed to me that they could grow almost any important crop which I have ever seen grown anywhere. The cotton fields

are as productive as in any part of the south, while the corn fields yield as heavily as in the famous corn belt of Iowa and Illinois. Along the coast there is an extensive area where rice is the principal crop. A rice field makes as poor bee pasture as does a field of sugar cane, which is also grown to a very large extent.

In traveling about the state it seemed to me that there was more diversification of crops than in any other southern state. While in many neighborhoods the farmers confine themselves largely to one crop, as rice, or sugar cane or cotton, in others one sees a variety of crops grown on the same farm. Cowpeas or soy beans are very generally grown in the corn fields, and where this is practiced the bees are likely to find good pasture, also. Velvet beans are grown to some extent in Louisiana, and although the honey is of poor quality, a flow of about six weeks duration is often secured with an average of as high as

100 pounds per colony.

White clover grows luxuriantly along the railroads, in pastures and in waste places generally. While it yields some nectar, I found no evidence of the large crops of honey which were once reported from Louisiana by E. R. Root in *Gleanings*. In my opinion, white clover cannot be depended upon to yield nectar freely so far south. My observation has been that the yield of honey from white clover increases as one goes northward and that crops of honey



There are large areas of tupelo swamps in Louisiana.

conditions there is little that the individual can do except to make the most of circumstances as he finds them. When the time finally comes for a statewide movement under direction of a competent engineer like Gen. Goethals, we will have another Holland in America, with the additional advantage of a ten months growing season.

The Crops Grown

The beekeeping possibilities of a

from this source are much more dependable in Minnesota than in Iowa and better on an average in Iowa than in Missouri. There may be an occasional crop from white clover in Louisiana, but I would not expect it to yield heavily except in a favorable season.

As already stated, southern Louisiana has about ten months of growing weather and the amount of forage that can be produced from an acre of land is amazing. It is quite possible to raise two and sometimes three crops from the same land.

Honeyflows

Soft maple is an abundant source of both nectar and pollen and sometimes a small surplus is secured from maple in late winter. There are immense areas of willows in the swamps and willow honey is a common product in Louisiana. Since white clover begins blooming along with the willows it is not improbable that some of the honey credited to white clover comes from the willows. According to E. C. Davis, the extension apiarist at Baton Rouge, large crops of honey are often gathered from willow. He reports as high as 210 pounds of honey from this source gathered by a strong colony. White clover begins blooming in January and usually yields nectar from February to July, along with several other plants which yield at the same time. The variety of plants which yield nectar is so great that it is often impossible to separate the honey from different sources and to know how much should be credited to a particular plant. Surplus is gathered from willow, white clover, tupelo, pepper-vine, heartsease, thoroughwort, goldenrod and several others.

The honey gathered in spring is usually light in color and of mild flavor, while the later crops are amber



Live oak tree on University campus at Baton Rouge, La.

or dark in color and of pronounced flavors.

From even a limited observation it becomes apparent that there are a number of plants which yield nectar freely which are not generally recognized and not often mentioned in the literature. Jes Dalton found that lizard's tail (*Saururus cernuus*), which is common in the swamps, occasionally yields considerable nectar at a season when there is not much else to be had. The plant is uncertain in its behavior and not always to be depended upon. Climbing boneset is abundant in some sections and is known as wild sweet potato vine or "pomme de terre," and is a valuable source of nectar. Until very recently there has been little if any mention of this plant as a source of honey.

The pepper-vine, also known as pepperidge or snowvine (*Ampelopsis arborea*), is a seven-leaved climber exceedingly common in the swamps all through the Gulf Coast region. It is the source of large quantities of honey of an amber color and mild flavor. This plant is known by a variety of names in different sections of the south, including crossvine in Georgia and cow-itch in Texas.

Ampelopsis cordata, a related plant, is perhaps more generally known by the name of cow-itch and is probably equally valuable as a source of honey. A crop of 135 barrels was said to have been gathered by George Saxton, of Atchafalaya, mostly from peppervine. I passed by this apiary which is located in the midst of a swamp and the hives are all on platforms above the water, but unfortunately, I did not see Mr. Saxton.

A large part of the surplus honey in this region is from vines. In addition to pepper-vine and cow-itch, Virginia creeper, poison ivy, climbing boneset and morning glory, yield nectar. Willows and tupelo grow over immense areas of swamp and much good pasture is inaccessible to the beekeeper except by means of a boat. Much has been written in the past about the heavy honeyflows from tupelo in Alabama and Florida, but I had never heard of the large areas of tupelo in Louisiana. One of the pictures shows how the trees grow in the shallow water of the swamps.

Since there is so much wet land in the state one would expect to find heartsease especially valuable. Apparently it is important. I found one report of 27 colonies which gathered an average of 150 pounds per hive from heartsease alone.

There are numerous other sources of honey which space will not permit me to discuss in detail. Locust, buttonbush, vervain, gallberry and other species of holly are locally important in some sections of the state. Much



Some prominent Louisiana beekeepers. From left to right, Miss Odette Meyeaux, Jes Dalton, Henry Meyeaux, Bert Morgan and F. M. Morgan; Murray Meyeaux and Oscar Meyeaux.

yet remains to be learned concerning the honey plants of this region. The bees gather from numerous plants in the swamps where they are not readily seen by the beekeeper and in many cases he can only guess on what they are working. Good swamp locations will support large apiaries and as many as 250 colonies in a yard is not unusual.

Some Louisiana Beekeepers

My stay in Louisiana was entirely too short, as it came at the end of an extended trip through Texas and it was necessary to get back to the office. There was much to be seen which time would not permit, and my visits with most of the beemen were somewhat hurried.

My first contact was with E. C. Davis of the University. Davis is a real enthusiast of the type which successful extension work requires. He has great faith in the possibilities of bee culture in the Bayou State. The



Jes Dalton and J. L. St. Romain under shade of a banana tree.

picture shows him with a huge magnolia blossom standing at the foot of a magnolia tree with his characteristic smile. Davis is largely concentrating his efforts in the boys' and girls' club work. This seems the quickest way to improve beekeeping on the farms of Louisiana. The youngsters take up with modern methods quickly and it is not difficult to teach them the use of frames and full sheets of foundation, whereas too many of the oldtimers are quite content to continue to keep bees in hollow logs as their grandfathers did.

A new university is now in process of building and its influence bids fair to have an immense effect in improving the agriculture of the region. A special tax has been levied on natural resources, such as sulphur,

oil and lumber, for educational purposes, and the result promises much for the future.

The picture shows a liveoak tree on the university campus. The liveoak, with its festoons of Spanish moss, is a common sight throughout the Gulf Coast region. It would be difficult to find a finer shade tree than the one here pictured. It has an immense spread and is apparently very old.

From Baton Rouge I went to Hamburg, which is the center of the package shipping business of the state. Bees build up very early in favorable seasons, and the shipping of live bees to the north is the most natural development for the beekeeping business to take. On the south coast, bees often swarm as early as the middle of February, and this makes it possible to turn the early nectar into bees at a time when there is most demand for live bees from northern beemen. Rainy weather interfered somewhat with getting about, but it was my good fortune to meet the Meyeaux brothers and their sister, Miss Odette, F. M. Morgan and his son Bert, J. L. St. Romain and E. J. Beridon, Jr. One picture shows Miss Meyeaux and her brothers with Jes Dalton and Mr. Morgan and his son, while the other shows Mr. St. Romain and Jes Dalton under a banana tree at the Dalton home.

Although this story is already getting long, I cannot refrain from mentioning a day spent with Dalton in a study of the honey flora. I was anxious to see the swamps and he promised to satisfy my curiosity in that direction. He led me by devious ways over fallen logs and through shallow water, occasionally dropping into a cypress hole, until we were two bedraggled looking specimens, to be sure, but we did see the tupelo in all its stately beauty and the peppervine and lizard's tail and many other swamp plants in their natural homes. We picked up a good bunch of chiggers and a few blisters and bruises, to say nothing of the mosquitoes, but we had a glorious day and I immediately decided that if ever opportunity offers I will go back and spend at least a month in exploring those swamps.

Jes Dalton lived in South Dakota and in Oregon and I don't know where else, before he went south, but he seems sure that Central Louisiana is quite the best place he has yet seen to keep bees. He has a big fig tree in the back yard and I am sure that I ate my full share of the fruit. That is one of the greatest attractions of a trip south, to me, to get my fill of fresh figs right off the tree. Unless he can go to the place where they grow, the northern man is denied the joy of fresh figs, for, unlike other southern fruits, they cannot be shipped in the fresh state. One crabbed old southerner said that was the best thing about them, because the "damned Yankees can't have any." Repeating such jokes gives a wrong impression of the southern people, for I have always

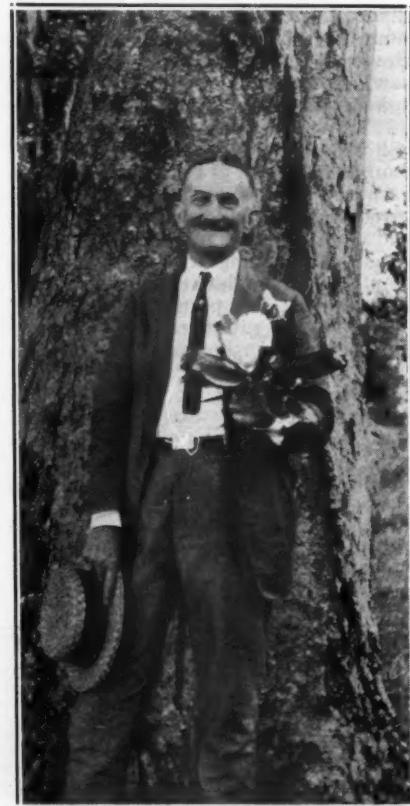
found them as friendly and hospitable folks as the old world affords, and I never lose an opportunity to visit old friends and make new ones in the south.

Fraternal Honey Producers

The third annual convention of the Fraternal Honey Producers of California is now history. The attendance was not as large as it was hoped it would be.

A very able paper was presented by Inspector Pleasants, of Orange County, on the subject "Do We Need a State Inspector?" in which he endeavored to show the folly of having a state inspector, also spoke of the probable advantages of having one. However, he went on record strongly opposed to the law creating a state inspector, but was strong for the enforcement of the existing laws relative to the bee industry.

A resolution was sponsored by the



E. C. Davis with a huge magnolia blossom.

inspectors, some nineteen, acting as a whole, for the enacting of universal laws throughout the state, strongly emphasizing the law relative to moving bees from county to county, or state to state, and within a county, without authority from the inspector in whose jurisdiction the bees are located, the primary object being to prevent the spreading of the various types of foulbrood.

Election of officers resulted as follows: Mr. George E. Emerson as president, Miss Wiggins as secretary, after which the meeting adjourned until the regular stated meeting in 1924.

G. W. Bercaw.

STORED POLLEN

By Allen Latham.

A NOT infrequent question is: "How can I get rid of the pollen stored in my combs?" The question is brought about by anxiety lest the queen shall not have cells in which to lay her eggs. Is there need of any such anxiety? Might one not just as well ask: "How shall I get rid of the excess of honey stored in my combs?"

There are seasons of the year, especially in late summer, when bees gather more pollen than their immediate needs call for. If this happens when the old queen is failing, or when the colony is queenless prior to giving a new queen, the accumulation becomes alarmingly bountiful. Throughout the broodnest there is not a square inch of comb without its cells of pollen. I have seen cases where the new queen could not find opportunity at first for depositing more than a few hundred eggs, and these scattered. At first, I say, because the difficulty is not at all permanent.

I believe that few beekeepers realize how much pollen is used by a colony of bees. Indeed, I am confident that many of our experts in reckoning the quantity of honey required annually by a colony of bees have over-estimated the amount, for the reason that they have underestimated the amount of pollen. The statement that a comb of honey is used in producing a comb of brood is far from true. It may possibly be true that two combs of brood would require one comb of honey and one comb of bee-bread.

Any beekeeper can observe the following: Choose a spring day when pollen is pouring into the hives. In the afternoon open up a few hives and note that in many cases whole broadsides of combs are solid with new pollen. Not only will each outer comb of the broodnest show this, but there will be a rim of pollen above the brood in many combs, and the corners of others will be plugged full. Suppose the next day to be rainy. On the third day, the day after the bees have been kept in by rain, open up some hives early. Look for the pollen. You will find whole broadsides of combs with every cell carrying its egg, all cells of which two days before were full of pollen. Where has the pollen gone? A little study will show anyone that more cells of pollen have disappeared than have cells of honey.

I have no statistics, nor do I see any easy way to get at such, but I would venture a guess that any colony, in a season, stores and uses a greater bulk of pollen than it does of honey. A pollen shortage does great harm to the colony life. It will not destroy the colony, but it will hold it back in its development. Why then worry about pollen-clogged combs?

It is rarely safe to make wholesale

statements in regard to bees, as localities vary so much. I have kept bees in various parts of New England, and while I can say safely that in this part of the country we need have no fear of pollen, it does not follow that I could make that statement of Texas, or of California, or of Kentucky.

Years ago I used to worry some when I saw in August those pollen-clogged combs and the new queen apparently unable to find cells for her egg-laying. When, however, I found that in every case where the queen was a good one she would have a fine brood-nest in about three weeks, I began to forget pollen-clogged combs.

Pollen properly stored in the combs is a valuable asset. If stored in the upper third and then covered with sealed honey it is a splendid bank account. If stored lower down and enters the winter uncovered by honey, its value is less. It may mold or it may sour. When pollen has molded in the cells, or has dried hard, it becomes valueless to the bees and is removed slowly. This occurs when bees gather pollen freely in August and then suffer a failure of the fall flow. If there is no fall flow this pollen is not all used up and what is not used is not protected by sealed honey. But let the fall flow occur, and what happens? The bees use most or all of the scattered pollen. They work the line of sealed honey lower and lower, covering as they go a goodly amount of preserved pollen. This pollen, under its layer of honey, keeps perfectly.

In the following spring the bees start breeding early, as they are constantly uncovering stored pollen. With a balanced ration their development is rapid. Even if no pollen is furnished by the early spring flowers, such colonies will come through April with a good brood nest, every cell of mixed food will be quickly represented by a larva-filled cell. Compare this fine condition with the colony short of such mixed food cells, what little honey they have being in cells containing no pollen while all the pollen is scattered unprotected through the hive. Unless favorable weather allows the free gathering of new pollen, these latter colonies will come on—oh, so slowly.

The normal food condition of the colony is so important that it would seem wise when the fall flow fails, to feed continuously rather than wait till later and feed just for winter. Slow feeding through September would be costly, but it would furnish a fine guarantee for success the next season.

If one does not care to feed and finds his colonies coming into winter with these combs of exposed pollen, he would do well to remove 50 or 60 per cent of such combs, substituting for them combs of his salable crop.

The combs removed can be kept in a cool, dry chamber—not too dry an atmosphere in which fruit would keep well is good. Kept thus, the pollen will not mold and will not get hard. Given to the bees in spring, these combs will help materially in building up the colony.

Pollen is essential throughout the breeding months, but in early spring its value is still greater, for the reason that new pollen is so much at the mercy of the weather. If you are a wise beekeeper you will think of the pollen stores as well as of the honey stores when you are getting your bees ready for the next season.

ADVERTISING AT SHOWS

On November 8, 1923, I had the pleasure of visiting the apple and honey exposition at the Grand Central Palace, New York City. Both exhibits were complete and fully demonstrate that the East has both quality and quantity. The beekeepers held a meeting at which over 200 were present, and they heard several fine talks.

The show brought to a climax a thought that has long been on my mind. This show is a big advertising scheme. The admission was 50 cents. I think not more than one in twenty of those present was a possible customer, and to that extent I feel the show a failure. This idea also applies to running a honey ad in a bee journal—the consumer never sees it.

I fully realize that there is a place for bottled honey. It is in great demand for picnics, tourists, delicatessens, hotels and dining cars. Where there is a family of several hearty youngsters, bottled honey is entirely out of place, as it is too expensive; as a result, honey is never on the bill of fare. In all of my talks with heads of families none had ever heard of the 60-pound cans and the price of the same. Exhibits of honey at fairs and groceries are always of small packages and a big price, which alone is enough to ruin the industry.

I did not see any sales of honey at the show. This is the age when no one carries a package. If there had been an exhibit a half dozen 60-pound cans with crates and price, I feel many orders would have been given. The idea is to educate the man of family to buy the 60-pound cans.

Bruce Paddock.

Good Prospect in Iowa

I believe that bees have gone into winter in best condition in years, heavy in bees and honey, and I think we can look forward to a heavy honey crop for 1924.

I moved twelve colonies to winter quarters October 15 and packed them with four inches of dry leaves on three sides, leaving front so they can fly at any time. They were carrying some pollen November 18.

H. C. Springer, Iowa.

UNFINISHED SECTIONS

WE have asked several beekeepers to tell us what they do with unfinished sections and what method of management they follow to avoid getting too many of them. Most of those who answered our questions did so very briefly, simply stating that they feed them back after the close of the flow. Two beekeepers, however, J. E. Crane of Vermont and B. F. Smith, Jr., of Montana, gave us detailed accounts of their method of dealing with unfinished sections, and these we pass on to our readers in full.

UNFINISHED SECTIONS

By J. E. Crane.

It is a wise man that can look ahead and foretell future events and prepare for them, and it is a wise beekeeper that can look ahead and tell with some degree of accuracy when the flow of honey will close, work in supers stop, and so arrange the amount of super room that most of his sections will be finished. With only one yard of bees to look after and glass boxes for supers, we thought we could do very well, but with sections in supers out of sight and ten or twelve yards to look after, that we can visit only once in eight or nine days, we often find ourselves with a large amount of unfinished sections at the close of the season. This is apt to be the case when the flow stops suddenly from severe drouth or heat, or it may come from excessive rain. I find we have nearly 3,000 such sections on hand this year. Many of these, however, came from having put on empty supers after our crop was off, to keep the bees from crowding the brood chamber with honey and so keeping the queens from laying.

Many years ago we used a large super, holding forty sections, but we had such a large number of unfinished sections, unless the season was very favorable, we cut our supers down to twenty-four-section size with very satisfactory results. If we need more section room it is easy to tier them up and get all the room we need.

But what shall we do with these sections that are unfit for market? While we would have much preferred finished sections, they are not valueless, by any means. I have noticed some beekeepers set them aside and put them on their hives next year just as they are, and get a rather poor quality of section honey as the result.

If we examine these sections unfit

to market, we shall find some of them nearly full, which will weigh twelve or thirteen ounces, but sealed only on one side or partly on both sides, while others will be very well capped on both sides, but will not weigh over eight or nine ounces. The combs of such sections may be cut out and put in tin pails, for which there is usually a local demand at a fair price, or they may be sold with the section to someone who is making and selling honey sandwiches.

But the great majority of unfinished combs will be too light for this purpose. We therefore make it a point to extract the honey from all these. It is not a very difficult task. We have eight or more frames made that will each hold eight sections, two rows, four in a row. A wedge at the end of the frame will hold them securely, and the frame of sections can be handled like a frame of honey for extracting. One person can fill these frames with sections and uncap such as need it, while another runs the extractor, and in this way move the work along quite rapidly.

After extracting, the sections should be returned to the supers and placed over hives, to clean up all honey left by the extractor. Bees will clean them up very quickly if the weather is warm and an empty brood chamber is first placed over the bees and the supers over the empty brood chamber. If the supers of sections are placed directly over the frames, without any empty space above, the bees may bring the honey from the upper ones and store it in the lower ones, near the brood, and leave it there.

As soon as the sections are well cleaned they should be removed to the honey house. If there is no pollen in them, the larvæ of the wax moth are not likely to injure them. If there is pollen in them, they should be treated to the fumes of burning sulphur or carbon di-sulphide, or the combs cut out and made into wax; or, if it is a good comb, the pollen cells may be removed and the comb saved for further use.

After winter sets in and the weather is cold, these empty sections should be gone over and with a good knife cut down so the combs will not be more than three-fourths or an inch thick, when they may again be placed in supers with separators, ready to go on our hives as soon as clover blooms. When the combs are cold they can be easily cut down to the exact thickness desired. If the

combs in sections are left full depth or nearly so, and placed on hives to be refilled, bees will not finish them so they would look nearly as well as when the comb is cut down, as the bees will have to add new white wax to draw out the cells and cap them.

For cutting down the combs in sections, I made over a Bingham uncapping knife by cutting off the end about three inches and bringing this end to a sharp beveled edge, the same as the other edges, and again leaving about three and a half inches of the blade full width. I cut down each edge with emery wheel, so I have a blade for uncapping about two by three and a half inches, which we find very convenient for this purpose.

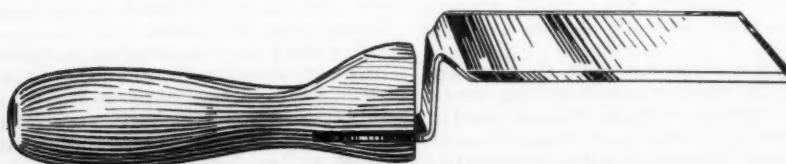
It sometimes happens, I am sorry to say, we do not always get around to put our unfinished sections on hives to be cleaned up after extracting, and the honey in them granulates, and we find cutting down the combs a rather sticky job, but we go through them just the same. Such sections should be placed on hives a little earlier in the spring, before there is much honey coming in, to give the bees a chance to clean them up before there is any danger of their filling them while there is any granulated honey in the base or sides of the cells, as it is liable to start granulation and we may have honey in the fall granulating and we wondering at the cause. We find such combs, well started, a great help the following season, and we are able to secure many more well-filled sections than we otherwise could. By cutting them down, they can, when filled, hardly be told from those built from foundation. The same knife which I use for uncapping we find very useful in cutting down the combs after extracting the honey from them.

DISPOSING OF UNFINISHED SECTIONS

By B. F. Smith, Jr.

In looking over some old price lists recently I noticed No. 1 sections listed at \$2.75 per M, and I could not help but think how nice that would be when you get caught with several thousand unfinished sections. In looking over our records we find the flow stops some seasons regardless of weather, ranging from August 10 to September 25, and with this wide variation in time for the flow to quit it is rather a difficult matter to make any plan that will work right along.

Our plan has been as follows: The tops of all sections are paraffined when we put them up, in April or May, and carefully stored to keep them from the dust. Our first super given to the bees contains a few dry bait sections, and as soon as the bees are working nicely in this super it is raised up and an empty given below; if the flow is heavy and the colony strong, an empty super is also given on top. This procedure is followed until we have somewhere near what the bees usually fill. Then no



Capping knife cut down for use with unfinished sections.

more empty supers are given below, but as fast as a super is nearly finished it is removed and the unfinished sections placed in a super with the nearest empty sections in the middle of the super. These supers are called "go-backs" and are given to colonies who show a tendency to cap readily. These should be placed next the brood nest and the colony should be crowded somewhat. In spite of all our planning, I remember a season, just a few years ago, when everything was finished up and the flow and weather still held good. We removed all supers and gave each colony an empty super with nothing but sections and full sheets of foundation (that means top and bottom starter), and had these finished 75 per cent before the flow stopped. These supers were put on September 5.

One season we gave the bees supers as long as they would store honey in them, regardless of weather or time, and of course had lots of unfinished sections. These were removed from the hives and stacked up in tight piles, with small entrances for the bees to rob out, and after robbing we sorted these sections. The next season we used them without further cleaning and found that it worked very nicely. We have also extracted the unfinished sections and placed them on a strong colony to clean out, but with poor results. Our method is now to make up a grade of culls which weigh 10 ounces net, which we sell at about 75 cents less per case than No. 2. This takes a large per cent of the unfinished, and those sections that weigh from four to nine ounces are broken out and melted up. Sections with dry drawn comb are saved and sections with just one or two ounces of honey are placed in stacks for the bees to rob out. We find that, if the sections are paraffined, they clean readily and can hardly be told from a new section the next season.

Montana.

LOCAL MARKETING OF HONEY

By A. W. Puett.

About the first thing I learned when I started in the bee business was that I had to create a market for my honey—I had to teach the people to use my honey. My apiary being small and the surrounding country comparatively thinly settled, this was not a difficult problem.

I took a half-gallon jar of my choicest honey (4 nice slices of comb, filling in with extracted honey) to the editor of my local paper. I asked him if he would be interested in a gratis article on the subject of bees and honey, at the same time presenting him with the jar in hand. Of course he was glad to have such an article, therefore I prepared a brief article on the lives of bees and their artistic ways of working.

About the same time that this article appeared in the local paper, I approached the leading merchant in the city as to his interest in placing

a stock of my honey, offering him a reasonable discount below my retail price, agreeing with the merchant that he and I should sell the honey at the same price. By this agreement the merchant is protected as well as myself.

When I had completed my arrangements with the local merchant, I advertised my honey, using his name, stating that he handled my honey. This pleases and benefits the merchant, also.

The effects were gratifying. I sold all the honey I had for market that spring and could have sold as much more, and by continuing this method I have reaped bountiful returns in following seasons.

Never make an agreement with a merchant of this character then let a special friend of yours have a jar of honey below your regular set price. It would be better to give it to him rather than cut your price for an individual. To cut your price would be an injustice to the merchant handling your honey, and would mean failure to you, for you would not know what your honey was selling for on the local market, and your merchant doubtless would drop you from his list.

I find that one of the best advertising mediums possible is to secure the assistance and confidence of your local merchant and editor.

People who buy "shipped" honey seldom have confidence in it. They are afraid it is adulterated. Locally, people know what your honey is. Besides, I place labels on my containers which read like this:

"Candying of honey is the best proof of purity. This honey will candy during cold weather. I will pay \$100 to anyone proving, after analysis, that my honey is not strictly pure. To liquefy candied honey, place vessel in hot water. Do not let the water boil."

See to it that your honey comes up to the requirements of this label.

Another unique way to sell honey is by attending picnics, barbecues, fairs, etc., exhibiting an observation hive with a laying queen in it. Place the hive so that all pedestrians can watch the queen deposit her eggs.

Be prepared to answer the multitude of questions which will be propounded.

Make a barrel of vinegar out of honey for this exhibit. Give a small sample to each lady who visits your stand. Furnish the pickles for the affair and advertise previously that you are to furnish pickles, made of honey vinegar.

Advertise in the local paper in or adjacent to this community that you will present such an exhibit.

Refrigerate some honey into a candied state beforehand and prepare a handy heating device, showing the ladies how to reliquefy their candied honey.

You will be surprised to know the number of women who do not know that candied honey can be reliquefied. Your labels inform them—you verify the label.

It is advertising well done to hand

out leaflets, recipe books, etc., with each sale of honey at such an exhibit. They are worth ten times their cost. Be sure to have a supply of honey for sale, and also be prepared to take orders at an exhibit of this kind.

Not long ago I had a peculiar experience which resulted quite remuneratively for me. The Baptists in our town called a pastor. You readers of course know, since we are all in a country industry, that it is the custom, when calling a pastor, to "pound" him upon arrival in his new field. At this pounding I presented a half-gallon of my choicest honey. The honey was not wrapped as were most of the other pounds, therefore its appearance stood for itself, and caused a great deal of comment.

Getting your honey before such a fine group of ladies as participate in "poundings" is advertising well done.

Doubtless some of you have had experiences similar to mine in connection with a local editor. I find they are like a good many other people, believe that bees have "raw heads and bloody bones." On several occasions I invited Mr. Editor to visit my apiary at queen-rearing time so that I might show him how Mrs. Queen Bee is reared; knowing the writeup that would follow, and its effects; offering him veils, gloves, boots, etc., for protection; also told him I would pay \$1.00 for every sting he sustained, but he always answered me like the superstitious negro: "Boy, I can done smell dem flowers growin' on my grave."

Robert Lee, Texas.

FACTORY ENVIRONMENT AND ITS ADVANTAGES

Are you a bee man and salesman, too? This one is both. The advantage was his, in one sense of the word, but who else would have thought of that? The town wherein he resided boasted four factories. He interviewed the heads of these factories and secured the signature of the head to a contract to sell honey to the men. He then advertised for another man to enter the business with him to sell bakery products. His man was not difficult to find, and soon a shack was erected which bore the sign, "Take Home Honey to Your Honey." Another sign below that read "Baked Goods and Honey for Dinner To-Nite: Let Me Furnish the Bake." The men read and wondered.

The next night not near so many rushed for the first car to carry them home, for they stopped at the stand to get their supper to take home in a sack. The shift coming on duty stopped to have their lunch baskets filled. Each factory told the same story. Business was rushing. Soon the dining-room of the factory received so many requests for honey and their baked goods at their regular meals that they, too, began to patronize the stand, buying in large lots this time. The dealer supposed, when winter came, that the scheme would have to be abandoned, but the factory head offered them a heat-

ed and lighted section of one of the buildings, that was unoccupied, for a very low rental. The bake shop uptown received ever increasing orders and wondered what it was all about. Night and day shifts were required to take care of business, for the factory boasted three shifts and there was always someone with a basket to fill. The factories were located near residence sections, and this, too, kept up the demand both winter and summer. The dealer in honey was forced to go out and buy up the stock of other bee-men to supply the business.

L. B. L.

**A BEEKEEPING LEADER FROM
QUEBEC**

Mr. Cyrille Vaillancourt, whose photograph adorns this page, is at the head of the Quebec beekeeping and maple sugar interests, as an official of the Ministry of Agriculture of the Province of Quebec. He also publishes the bee magazine, "L'Abeille," in the old city of Quebec. He is a fine man, a good fellow.

Mr. Vaillancourt was the only North American present at the International Congress of Beekeepers, of Marseille, France, in 1922. His influence secured the next congress for the city of Quebec, in 1924, probably in September.

A goodly number of U. S. beekeepers should attend this congress and get acquainted with our neighbors to the north. As they speak two languages over there, there will be sessions in each language. You will have an occasion to appreciate the hospitality of the descendants of the original settlers of Canada, and of visiting one of the quaintest cities on the North American continent. Make plans to go. Sooner or later the beekeepers of the world must get a little better acquainted internationally. If you go, you will not regret it. It will be a good vacation. The date will be published in good time.

Later

The date of the International Apiculture Congress is now set for the 1st to 4th of September, for the meetings, and the following days for excursions. It may interest those who would like to attend this meeting to learn that the Provincial Government of Quebec has voted the sum of \$2,000 to properly celebrate this event, and that similar sums are expected to be appropriated by the Dominion of Canada and by the divers beekeepers' associations of the Dominion. This ought to enable our neighbors of the north to royally welcome the visitors from foreign countries. The United States should be represented there by at least 300 visitors.

Programs will be forwarded to applicants by Mr. Cyrille Vaillancourt, of the Department of Agriculture, of Quebec, in either French or English, and by Leon Tombu, 185 Gaucheret St., Brussels, Belgium.

**"WHO IS THE MOST POPULAR
HONEY IN TOWN?"**

By Mrs. Luella B. Lyons.

Did you ever miss your train and later be glad of it? I had that experience once. I had had a three-hour wait in the town to make connections with the Flyer into Chicago. The station was a quiet one, so I decided to take a stroll about the town. I hadn't gone far when a motherly-looking woman approached me and said, "Pardon me, my dear lady, do you eat honey?" I was taken by surprise, but I managed to stammer out that I could subsist on honey, I believed. She seemed so pleased and began to fumble at her handbag. "Why ask such a question, madam?" I asked.

"Well, our honey dealer is giving votes with each ounce of honey sold on the most popular Honey in the



Mr. C. Vaillancourt in charge of beekeeping in Provincial Department of Agriculture of Quebec, and organizer of the coming International Congress.

community. Now you will think it strange, but these honeys are between the ages of 9 months and 6 years. I happen to be the mother of one of the sweetest of them, and that's why I am asking you to buy some honey and add your votes to my little daughter's count." She searched me with her quiet gaze and I began to count out some change, when I thought to ask for the details. She told me I would have to go to the corner grocer to buy the honey, so she fell in step beside me and talked as we walked.

"You see, our honey man had purchased the bees of his rival, as that fellow had poor health and was forced to go away. Well, this man did not know where to find a market for twice the amount of honey he had been selling, so he sought out a way to create a demand. He sure figured out the right way, and I doubt very much if his supply is going to hold out until the contest

is over, or else he will have to go into the other county to buy enough to supply the customers. With each cake of honey sold, a vote of 10 is given the purchaser of the honey, to be cast for their favorite in the contest, which is to find the most popular honey in town, with children between the ages of 9 months and six years eligible. Each store window selling the honey contains the pictures of the contestants, and strangers making a purchase may look over the bunch, unless already spoken for, as you are," she hastened to explain.

I was becoming still more interested, so I bade her go on and tell more. "The first prize is a Ford roadster or the cash equivalent; the second prize is \$100 cash, and the third is \$50 in cash. The next three receive \$10 in cash apiece, and the next fifteen entrants receive \$1.00 apiece. There are three hundred entrants so far and the race is getting to be a hot one. The store windows keep the community informed as to who is ahead. Buying is very heavy and honey is being purchased in basketfuls. Anything to gain votes, you know. The decision day is still far off, and, as I said before, I doubt if the supply of honey lasts. Our dealer made a trip southward yesterday in view of purchasing more immediately if the supply runs too low. But—I forgot, I am tiring you, and I think you were waiting for a train, weren't you?" She again seemed very anxious.

"Yes," I answered her, "I was going out on the Flyer, but I have missed it now, but I think I can catch another train out of here very soon. However, here is my card, and I wish you would let me know what place your little honey claimed in the finals, will you?"

I carried a suitcaseful of honey to my relatives in Chicago, who, by the way, were exceedingly grateful to me for the gift. Some time later when I had again reached my home, I received a card bearing this message: "I am very proud to tell you that I am the mother of the most popular young lady in the world, and that young lady has deposited in the bank the price of a Ford roadster, which is a nest-egg for a college educational fund. I think the beeman that conducted this contest will not have to set his alarm this winter to get up at 5 bells to go to work. He has found out what advertising is that pays when it is pushed."

Would you be brave enough to risk that much money in business getting and business boosting? Are you one that is afraid to take a risk?

Victor Hugo in "Autumn Leaves"

"Preserve me, oh Lord, preserve those whom I love, brothers, sisters, parents, and even my enemies triumphant in evil, from ever seeing, oh Lord, the summer without flowers, the nest without eggs, the hive without bees, the home without children!"

IDEAS ON QUEEN BREEDING

By Alois Alfonsus, Former Expert in Apiculture of the Austrian Government.

(Translated by George E. King, University of Illinois.)

IN America the technique of queen breeding has certainly attained to a high degree of perfection, but there still remain possibilities for improvement; therefore new methods are constantly being worked out for the production of good queens. But it appears to me that, with respect to this, a second phase of bee breeding that is equally important is but little regarded, and that is **drone breeding**.

Owing to the large number of colonies of bees which are maintained by the individual beekeepers, and, on the other hand, because of the many colonies of bees living in trees in many places, a fixed pure breeding strain of bees is very difficult indeed, if not almost impossible to produce. The radius of flight of the drones is much greater than that of the worker bees, and the most carefully conducted work of the bee breeder is nullified if the queens he so solicitously rears mate with impure drones. By the expression scientific breeding is meant the mating of certain selected individuals with each other. In our application of this to our bees it is rendered extremely difficult owing to the fact that the mating of the queen with the drone takes place high in the air, often at considerable distance from the apiary. There are only two ways to meet this situation.

If one wishes to mate queens with certain drones, he must either remove them to a region where no other bees are or endeavor to solve this difficulty in some other way. In Germany this received considerable attention even in the 1860's. The mating boxes, together with selected queens and drones, were left without interference for four or five days after putting the ripe queen cells in them. When the queen approaches the proper age for mating, move all of the mating-boxes into the cellar, and in the afternoon toward 4 o'clock each day return them to their accustomed places. These places must be so chosen that they will receive the full evening sunlight. If a little warm sugar water is placed just within the entrance of each stock by means of a small syringe, the little colony will very quickly take a play flight, even the drones and queen joining in the flight. These procedures were frequently employed in Europe with excellent results at the time of the importation of the Italian bee. But it is uncertain and time-consuming, and therefore impracticable in the large business. In certain special cases good results might be attained by the application of either of these methods. Again, the establishment of mating places has proven of extraordinary value. The Swiss were the first to establish

these. The first mating place was on Ufenau Island, in Zurich Lake. At present such mating places are established on upland meadows in the mountain forests.

These breeding places have proven successful for the pure mating of queens because on the one hand, in recent times, owing to modern methods of sylviculture, all hollow trees are removed from the forests, and again to the circumstance that the drones from the valleys do not ascend to the air of the higher regions.

Whoever has done work in entomology at any time will be aware of cases among the Lepidoptera, as the silk-worm, where, by means of their fine sense of smell, the males are lured over distances requiring many hours of flight to reach the females. If one should take a newly emerged female silk-worm moth of the species that live in the forests and in the evening place her in a cage trap out of doors in a large city like Vienna, in the morning he would be certain to find in it male moths that had flown from the forests. Now the queen bee likewise most certainly also has a strong sex odor, by which the drones are allured to her from several miles distance. But as concerns the mating stations situated up in the mountains, this is not the case, for the air currents which prevail up there are for the most part different than those in the level places. Such mating stations could, however, be successfully established on a great prairie, far removed from all thickets and apiaries.

In Europe an exceptionally choice breeding colony which has a large number of drones is selected and located at the mating place. The beekeepers then send their droneless queen mating nuclei with young virgin queens in them there. As soon as young brood appears in a nucleus, it is returned home. The Swiss beekeepers, who for more than 20 years have carried on supervised breeding, have thereby so greatly improved their home-bred native brown bees in honey production that when similar trials were made with 3,000 colonies in different neighborhoods the improved colonies averaged much higher in their honey production than the colonies of the same race not so treated. Special attention should similarly be given to drone breeding in America as well.

In extensive apiaries the excuse may be offered that drones will be present in superabundance even though each single colony produces but 1,000 of them. This is very true. But how many drones from inferior colonies and those prone to sting would under these circumstances not be brought into the world to nullify the results of queen

breeding, managed otherwise most carefully? Only the strongest colonies that produce the best results should produce the drones for the whole apiary. It is not believed, indeed, that the rearing of large numbers of drones will ever do other than reduce the honey yield of a colony. Professor Dr. Enoch Zander of the University of Erlangen, Bavaria, has proved that his **drone stocks, which as well as producing drones for the whole apiary, also gave the highest honey yield.**

The best breeding colony in the apiary should produce many drones, so as to provide all of the other colonies with the best of drones. Again, the exclusive employment of combs drawn from artificial foundation in the best breeding colonies must give away. In the spring, as soon as the comb-building impulse is noticed, these colonies should be provided with empty frames containing foundation starters, and then allowed to build drone comb as they please. When the drone combs have young brood in them, they are then to be taken and placed in the inferior colonies, so that they will be allowed to produce no drones of their stock. In this way one can take many drone combs from the best colonies for breeding and supply the whole apiary with pure-bred drones.

This clearly is as important as is the careful selective breeding of the queens. What avails first-rate breeding from the choicest breeding stock to be had when at the same time we take no pains to have good male breeding material? Good male material must be most numerous in the apiary. Inferior drones must constitute a minority or wholly disappear. Then can we first expect to get real results from breeding.

Friedrich Wilhelm Vogel of Lehmannshofel, near Zechin, 1897, was one of the first breeders. He has worked with the various races of bees and has recorded wonderful results in breeding conduct. At first he demonstrated that the drones transmit the tendency to sting. Although I and many other bee breeders most certainly have no dread of bee stings, still no pleasantness attaches to a colony which has a tendency to sting badly. I will not be the slave, but the master of my colonies of bees.

In the marking of queens I perceive only a very distinct advantage to queen breeding. At present this is universally practiced by the breeders in Germany, Austria and Switzerland, and no practical breeder neglects it. The placing of a colored spot on the thorax of the young queen makes her distinguishable throughout the year, and it is to be wondered at that the practical Americans as yet have not adopted these advantages to their uses.

Bright colors, such as white, dark yellow, bright red (cinnabar) and green should be used for marking. Colors for marking can be obtained ready for use by purchasing it from supply dealers, but each beekeeper can prepare it himself.

The finest color can be prepared

by mixing it to a thin consistency with lac dissolved in wood alcohol, in a pulverizing dish, such as the druggist uses, after which it is to be poured into a bottle, tightly stoppered, and the cork and neck of the bottle well covered with hot wax to prevent evaporation of the alcohol and drying up of the color. Many bee breeders, though, simply make up the color each time it is needed, by stirring the lac and color together on a glass plate. However, it is recommended that enough color for the year's needs be prepared and that a small bottle be filled for immediate use. It is best to mark the young queens even before their wedding flight, although they can also be daubed with color by taking them from the mating nucleus before they are assigned to the apiary or mailed away.

The skilled expert either takes the queen by her wings or he seizes her by the thorax between his thumb and index finger. A spot may be made on the thoracic shield by means of a little pointed piece of wood that has been touched in the color. The color dries immediately, so that the queen can immediately be allowed to again run among her bees. Even a wing-clipping device for holding the queen fast can be used to advantage by the unskilled beekeepers. One might also use a metal frame over which gauze is drawn, and which with three pins can be secured to the comb, firmly holding the queen, which one can then easily mark with a spot of color.

The marking of the queen secures very many advantages to us. Where each year we choose another color in a changing series we are able to tell the exact age of the queen each time we get a glimpse of her. Only that which is of advantage in pursuance of practical apiculture is to be considered. How easy it is then to pick out the queen of a colony, be it ever so populous. One sees her among the other bees at the first glimpse of the brilliant spot. One can also find the old queen in a swarm just as quickly. And then, too, each time one is made acquainted with the age of the queen. Evidently, then, one must mark every young queen in the apiary with the color for the year. In this way the queens of the colonies that swarm and those that requeen by supercedure may be distinguished, the same as all queens which we acquire by purchase. Moreover, we can then easily ascertain whether during the year a colony has changed its queen through supercedure. If we don't find the marked queen, but in her stead one without a spot of color, then we will know that we have before us a queen of this year. Naturally these are then immediately marked with the distinguishing color of the year. Since queen bees seldom get to be older than four years, the four colors mentioned suffice very well. But these must be uniformly applied as the year's color in all of America, as is the custom in the European countries. They might best be selected

at Washington, as, e. g., white for the year 1924, red for 1925, yellow for 1926, and green for 1927.

If all queen breeders and every individual beekeeper will carry out the practice of marking the queens in their apiaries, the advantage of so doing will be readily apparent. In my opinion it is only a question of time until the marking of queens will be universally adopted in America. In carrying on practical bee culture it indeed is an improvement, and we beekeepers are, as you know, friends of progress, consequently of colored crayon and colors for the marking of the queens in every apiary.

WHAT ABOUT THE WEST?

By Clifford F. Muth.

After four weeks of travelling through the Rocky Mountain States, I have been asked a dozen times or more, "What do you think of the western beekeepers and their problems?"

Well, to me the West is made of two things: first, beautiful scenery, especially Yellowstone Park, and, second, unfortunate beekeepers. The mountains and canyons will stay beautiful and the beekeepers' opportunity will soon come.

Not more than a stone's throw from the hotel I heard the familiar word "Honey," and I felt my ears turn up. It was Mr. D. I. Armstrong, of Boise, Idaho. He is quite a beekeeper, having about 600 stands of bees and producing extracted honey. Mr. Armstrong had a good idea. He has a Ford delivery wagon, and on Saturday he makes a killing by bringing his honey to town, and sells from the truck. Five and ten-pound pails are his favorites. I asked him why he does not produce comb honey, since he is in the comb honey region. His reply was the beginning of new light to me.

Mr. Armstrong said that at the present price of sections and ship-

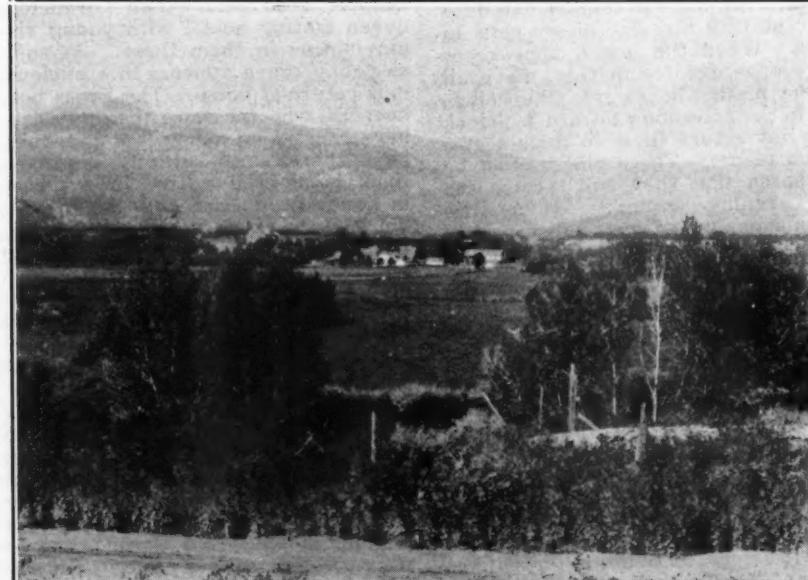
ping cases, and the market of comb honey, he was far better off producing extracted than comb—he was formerly a comb-honey man. Now the part that opened my eyes was this: One large comb-honey producer after another changed to producing extracted. At the end of four weeks, calling on western beekeepers, it is startling to know the shortage of "beekeepers" producing comb honey. More of this was seen a little later on.

The next beekeeper was our old friend L. C. McCarty. If ever you travel by the way of Boise, be sure and meet this Mack, for there is no other like him. He is not only a fine fellow, but as fine a honey producer as you will find. Mack may be a little late in selling his crop of comb honey, but when he tells us that he has 700 cases fancy, 200 No. 1 and 100 No. 2, you can just bank your roll that he has it all packed and graded and that it is graded just as he tells you. McCarty then drove me around in his Hudson to see his neighbor beekeeper, Mr. R. G. Lyons, of Nampa, who is one of the coming beekeepers of that section. He is an extracted honey man in a comb honey district. He produces very nice crops of honey and we will look forward to Mr. Lyon's progress.

80% Crop With 7% Demand

After that pleasant drive with McCarty we had a heart-to-heart talk together. The beekeepers there are unfortunately far away from the market from which they must buy; then after the honey harvest there is the far-off market in the East. The high freight rate adds to the cost to the buyers, so they receive just so much less per pound than the eastern beekeepers. That is not all; the weevil in alfalfa is becoming quite a pest; dairy farms more numerous until the clover crop is becoming very short. All this is very discouraging, but there is light ahead.

With the failure of the California



A scene in prosperous Idaho.

crop and the shortage in several of the other western states, it is very likely that the total honey crop in the U. S. will be some 20 per cent below that of last year.

However, it always takes two things to make price, and that is supply and demand. If the supply is 80 per cent and the demand is normal, these beekeepers as well as eastern producers can expect stabilized prices on both comb and extracted. But the demand is not normal, by a good ways. If we get our efforts centered on selling and creating a demand this fall, the result will be gratifying and reflected on the crops to follow.

Better Business Ahead.

Business conditions in general are expected to improve, the next six months, so let's try to improve the honey business with it.

The shortage of comb-honey producers is going to do one of two things: get the housewife more familiar with syrups until she does not recognize comb honey when she sees it, or the price will advance so far on extracted that there will be a turning back from extracted to comb; if this happens it will likely be "after the horse is out of the stable."

Ohio.

THE PACKAGE BUSINESS

By Jes Dalton.

The November issue of the American Bee Journal, as well as the issue before, had many articles and opinions on this subject. Those articles from both shippers and purchasers give us very interesting light on this many-sided subject. Heretofore most of the "kicking" has been monopolized by the buyers. It is refreshing to see that there are a few shippers that have something to say. On page 556 Mr. Floyd comes out strongly for the combless package shipped with syrup for feed. His chief reasons are that on syrup they either come through all alive or all dead, and less danger of disease.

Personally, I do not favor either a straight combless package or the straight nucleus. After years of shipping, I greatly prefer a combination of the two packages, a nucleus with a combless package shaken into it and with the queen already introduced and laying as that package speeds on its way. A well-balanced package put up this way has all the advantages of the nucleus, eggs, brood, combs and honey. It has the easy transferring qualities of the nucleus, but has the immense field force to warm and nurse the brood and gather honey that the combless package has. With no loss or delay in introducing, this package is in every way superior to either one of the others.

If I were considering the purchase of bees in packages I would not consider a wire basket with a bunch of bees clustered inside it, and a queen dangling around inside that basket

in another cage, for me to fish out and introduce after trying to get the bees inside a hive. I would not consider this a complete package of bees. I got stung once in Oregon on a hundred of those, and I defy the beginner, this side of Jordan, to get that conglomeration installed successfully in hives.

For a man with a state apiarist to assist him, or a veteran with experience and plenty of empty combs and honey on hand, that is another matter.

The disease question is an entirely different proposition. I positively would not buy bees from a state without a disease law, nor from a state that had much disease in it. There are too many places comparatively disease free, but even at this we have to consider outside opinion. We have two distinct infections of American foulbrood in Louisiana, both directly traceable to bees brought in from states where no law existed.

We now have a drastic law providing for inspection of all bees brought in, with quarantine of both apiaries and products of infected apiaries. Fire is the treatment for infected colonies, and we have an entomologist who is a "fire worshipper" in charge of eradication work. He inspected one of these diseased localities this past season and burned every hive, infected and uninfected alike, in the only yard that disease was found in. He seized all honey on hand and placed state seal on it, and it can only be sold under permit to bakeries.

Mr. Pellett, in his write-up on Texas beekeeping, November issue, sized up the situation pretty well. With our long, slow flows of poor grade honey, we are better fitted to furnish bees to the northern people than honey. He strongly intimated that it would be better for all concerned if we sent them good, honest packages of bees than for us to send our strong, cheap honey. With this in view, there is only one treatment for disease in these shipping localities. This is the "fire treatment." I have worked for this for several years, and last season I had the pleasure of assisting at the burning of the last infection in my locality.

Mr. Floyd says that the only trouble with cans of feed in those syrup-fed packages is that this one tiny hole gets clogged up. Correct, brother, but this is a mighty big point against it, as we found out in Louisiana years ago. One tiny grain of sugar, one fleck of dust, and that package is doomed. There is one more point in this business that the average northern man will not realize. Those packages are shipped out from here usually in May, and it is getting hot here then. Suppose a train is late: Mr. Baggage man piles these on his truck and wheels them around to the sunny side of his station, and there they stay until the train comes in. "Ventilate," yells the northern buyer. The package speeds on its way north, arriving in Nebraska, Montana, Vermont or

Canada some chilly, possibly snowy, morning, and at the depot again a train is late. Baggage man loads them on the truck and wheels them around on the northwest corner of the depot, and there they stand again until the train comes in, and the express messenger, feeling sorry for the poor little cusses, piles them all up around the stove.

When we solve the feed and disease questions and build a cage that will stand for the delays of trains under various climatic conditions, I expect to quit package shipping, for it will then be too dull and uneventful. In the meantime we have a lot of figuring to do to overcome some of this.

Louisiana.

PACKAGE OR NUCLEI—WHICH?

By L. T. Floyd.

Where we receive hundreds of inquiries regarding the best way to begin beekeeping we are often puzzled to know just what to advise.

If the nucleus colonies are shipped with the queens loose on the comb, the nucleus is undoubtedly the best proposition, but a very small percentage are shipped that way.

The three-frame nucleus is a good buy if shipped as above mentioned and the combs well covered with bees.

However, it is not unusual to see shipments arrive on three combs with so few bees that they are not showing on the outside of the combs. Colonies of this size are slow to build up, as they have not enough bees to generate sufficient heat to start the colony off strong. The one-frame nucleus is a poor proposition for long distance shipment, as it does not afford enough clustering space for the bees, and repeated jarring to the bottom of the box seems to wear them out and take the vitality out of them.

The danger of disease is the worst factor of all. One man told me that he liked to have them come on the combs, because if disease was present he could see it at once, but I have looked over many nucleus colonies apparently free from disease and then found A. F. B. in some of them in the second year in the old comb.

This gives us a dread of bees imported on combs, and I look forward to the time when all shipments will be forwarded in packages shipped on sugar syrup. We will then feel reasonably sure that there is no disease present.

I like the shipments on syrup; they seem so much more contented than the shipments on candy, and it looks reasonable that the water in the syrup would be appreciated when the weather is warm, as we all know that bees consume large quantities of water in warm weather when they have their liberty.

The package bees are a poor proposition when moved on foundation alone, unless the weather is very warm and plenty of honey coming in, but when combs are available a

two-pound package will do wonderful work.

One Winnipeg man who purchased five two-pound packages from Texas in late April secured a crop of 559 pounds of honey. He paid \$25 for the bees and sold the honey for \$117, shook out the bees and gave them to a neighbor, and after extracting the honey put his combs away for next season, when he plans to repeat the process. He says he thinks beekeeping a nice hobby for the city man at his summer residence; it is profitable as well as pleasant, and by managing in this way he has no worry regarding the winter.

This man, who is editor of a paper in Winnipeg, hived his package on

a full set of drawn combs with a super of combs as well. He claims to have doubled his outfit of combs and is prepared to double the number of packages next season if he wishes.

He might have received better results with nuclei, but they would have cost him half as much more in the increased express charges, and he is well satisfied with his season's work.

These packages covered nearly four combs when they were hived, and were fed sugar syrup for the first ten days, when they were able to gather enough honey to supply their requirements.

Canada.

ITALIANS VS. BLACKS

By W. E. Joor.

MR. ROBERTS has joined the "Anvil Chorus," I see in the September American Bee Journal, as this seems to be the "open season" for attacks on the Italian bee, and there appear "none so poor as do him reverence." For a year there have appeared articles in the journals derogatory to the Italian bee, and none have come forward to refute the defamatory statement, most of which are incorrect and all engendered by observations based on relatively minute territory instead of a broad all-observing view.

For instance: one Southern writer claims that there are only 2 per cent Italians in the United States, because that is the ratio of the races in the three counties of Alabama with which he is familiar.

If these various writers would quit looking at one or two small sections and look at the whole of our country, they would get another impression. Let us look at it this way.

A few years ago—about sixty years, to be fairly accurate—the first Italian bee was imported to this country, which was well populated with black bees and brown bees (apparently two different races). In fact, I think statistics will show there has not been any large increase of colonies of domestic bees in this period. There has been a reduction of the number of beekeepers, but not of domestic colonies. We have no statistics on the bees in the woods. They may be more or less, probably about the same or possibly less, as our forests are reduced. Notwithstanding the great number of Italian queens reared and sold every year, that number is small compared with the whole number in the country.

These Italian queens generally go into colonies that are reasonably well-kept and usually on combs from worker foundation, and drone production of these queens is restricted. They are intermingled with a larger number of blacks and mongrel, wild or ill-kept bees, which may have 50

per cent of their combs of drone size and producing great hordes of these black and mongrel drones.

At the time of the first importation there were only a very few Italians to combat for existence against these wild hordes, as in our colonization period there were only a few whites to many Indians. We should not wonder that all are not Italian now; rather, we should wonder that—except for a few corners of our land where beekeeping has only recently been developed—it is exceptional to find a really pure, unadulterated black bee.

In the annual report for 1922 of Iowa State Apiarist, about 15 per cent of the bees inspected are reported as black, over 25 per cent as Italian, and the balance of mixed races. I should judge that throughout the country as a whole, that ratio might be around the average. In the eastern states, in California, Texas (except east Texas), Colorado, and states where beekeeping has been well developed, the black ratio would be smaller and the Italian ratio larger. This would also apply to the sections that have suffered heavily from disease. Do not think the Italians bring the diseases, for they were with us before there was any importation of Italians. The Italians are what saved beekeeping in New York State from annihilation from European foulbrood.

Mr. Roberts' Bedfordshire friend could not keep black bees on account of Isle-of-Wight disease, but was free from it after securing Italians.

When I started with bees there were many hybrids and some black bees in my close vicinity. I bought a few pure queens, but left plenty of drone comb in their hives, requeened my yard from them and continued the process, replacing mismates. In four years there were only four or five in the yard of nearly 100, that were not pure, and within six years there were only about 2 per cent of mismates. One yard has not been

artificially requeened since 1919. The result? Very few colonies strictly pure, but not one but that would require the closest examination to note the impurity, and the tempers of all surprisingly gentle; and I assure you I know what gentle and cross bees are. Last year a queen reared in that yard took first prize in Texas State Fair for 3-banded Italians.

You may write about the "prepotency" or "dominance" of the blacks, and spin your theories, but "facts are facts." The Italian bee is surely, if slowly—by man's aid, to be sure—superseding the blacks. At first, without man's aid it would have been overwhelmed. Now, with man's aid withdrawn we would, after several hundred or thousands of years, have a hybrid race, possibly then with relatively fixed characteristics—what Dr. Bonney called "Apis Americana." But we will not have that, for man's aid will not be withdrawn; and we will eventually have an almost pure Italian race of bees in this country.

Am I simply making statements and not giving reasons? All right! Mr. Roberts' friend "had come to the conclusion that the black drones were stronger on the wing," etc. Because, forsooth, he thought there were too many mismates for the number of Italian colonies. May I ask: how about the relative number of black and Italian drones, not colonies? If black drones are stronger, how did Baldenstein and Dzierzon, Langstroth, etc, get even a few pure matings within one or two Italian colonies in a yard of seventy, with other black yards close around? I have often read this "stronger on the wing" idea, but have seen no evidence to support the statements; while I am continually surrounded, and all of us are, by contrary evidence, if we will only open our eyes and see. The only evidence I ever heard—and it was not written—was that a certain beekeeper claimed the flying championship for the blacks because in flying they made a noise in a higher key than the Italians. A small dynamo running at a high rate of speed gives a higher note than these great machines that move relatively much slower. But the latter are many times more powerful. A small airplane may have small propellers running at very high speed, giving a higher note than the larger, slower-moving propellers of a large machine, and yet the large machine goes much faster. The musical key alone does not mean anything. As a matter of fact, I do not think that there is racially very much difference in the speed of flight of the two races, although a test would be interesting if it could be contrived. However, we do know that Quinby considered the Italian workers much quicker on the wing than the blacks; and Alexander and many others have asserted that the Italian workers went much farther for nectar than the blacks. This would indicate more wing power for the Italian workers, and it would be natural to

suppose there was a similar characteristic among the workers' brothers.

Let's quit "knocking," for the sake of just "knocking." We nearly all agree that under most conditions the Italian is the best bee. If it wasn't it would never have gotten a real start in this country, for it has had an up-hill fight all the time. Quinby tried them out confessedly expecting to condemn them. He changed and became their staunch champion.

There are some strains and individual colonies that are not up to standard. Among the blacks there are some that are above standard, but let us follow Alexander's advice when he wrote in 1908: "With our well-bred Italian bees we now have good stock to work from; so let us unite in trying to improve them along the lines most necessary in developing a superior all-purpose strain of bees. This can be accomplished to a great extent in a short time; then beekeeping will become more reliable, more profitable, and a much pleasanter occupation. It has been a long, hard task to free it from the rut of ignorance and superstition of past ages; but we have at last placed it well forward among the intellectual pursuits of rural life; and now let us be careful and take no step backward that will check its forward progress along with other successful agricultural pursuits."

Mr. Roberts' article, as a whole, is misleading. There is a big "if" to nearly every point he tries to make. The first paragraph is true if the blacks largely predominate, and depends altogether on the proportion of blacks to Italians. It may be stated without danger of contradiction that where black and Italian blood are mixed a hybrid will result, and both will be present in the definite proportion of the admixture.

I do not think any thinking man would dispute the error of the statement quoted by Mr. Roberts from Dr. Bonney. Mr. Roberts is strictly correct in his statements on the subject of climatic influence. Climate has temporary influences that may show in several generations, but permanent changes are only after thousands of generations. The American race owes what peculiarities it has, and they are not fixed, more to racial intermixture than to climatic influence; the climate has had some temporary influences.

Sanders' article was wrong because he used the word "prepotency" in the wrong sense, and it was all based on a wrong hypothesis.

Mr. Roberts, in his poultry parable, had to assume some five or six suppositions, and none of them even remotely resembled the relation of black and Italian bees.

All these articles are trying to find obscure causes for a condition that is very simple if they would only see it. In each case of so-called reversion or black dominance where thoroughly investigated, only one cause would be found—a preponderance in the number of black drones over the Italian in the territory.

However, to keep a race pure, when near the other race, will require human interference; otherwise there will be a mixing of the two, the Italians losing some of their yellow, and the blacks taking on some of the yellow or losing some of their blackness. In either case hybridization will take place, with irregular markings according to the proportions of the races in the individuals and no uniformity for hundreds of generations. I think I am perfectly safe in saying that there are really fewer pure blacks (most positively respecting domestic bees) in this country than pure Italians.

Dallas, Texas.

(The experience of the Dadants is exactly parallel with the statements of Mr. Joor. When we began beekeeping in Illinois, in 1864, there were none but common bees here. The first queen, bought by Chas. Dadant, was secured from an Ohio beekeeper. She was a good one and we soon had a large number of young queens from her. The first matings were all mixed, of course, but the Italians soon showed their influence upon the blacks and I remember distinctly finding matings from our Italian drones four miles from home. I believe the average beekeeper does not realize how numerous the native bees are in his vicinity, if he figures on a four-mile radius. He also probably forgets that the skeps, box hives and gums always have more drone combs than the progressive beekeeper allows in his own hives. These facts would go far towards explaining the so-called "prepotency of the blacks." But I agree with Mr. Roberts when he denies the theory of our late friend, Dr. Bonney, that we have already succeeded in establishing a real "American breed of bees." It will take at least hundreds of years for that.—Editor.)

ADVERTISING IN A BANK WINDOW

By E. A. Meineke.

In the November American Bee Journal, Robert S. Merrill suggests that an exhibit of honey in a bank window would be of interest. We have tried such an exhibit and found it profitable as well as interesting.

A bank located in the busiest section of Chicago was selected for a trial. We were surprised to learn that the bank had a man who spent most of his time collecting material and information for window displays. The bank was glad to get material for an exhibit and furnished all the signs and drapes, as well as a large photostat of a queen and a worker bee.

In the center of the window an observation hive was placed so that the bees would attract the attention of people passing the window. A window display with action always attracts more attention than one without action. Copies of a small folder, describing our honey, were placed at each end of the hive, with a small card stating that copies could be obtained by calling inside. These booklets distributed by the bank gave us much advertising in addition to that received by having our name and address in the window.

Directly above the hive was a sign connecting the storing of honey by bees with the idea of thrift. To the left of the hive the photostat of the bees was hung, and to the right another sign bringing out the idea of economy.

At the extreme left was a poster headed "Bee Culture," which told briefly some of the more interesting facts about bees. Between this poster and the center of the window, sections were arranged to show how bees build the comb and fill it with honey, also a diagram showing the proportions of the essential food elements in honey. The right half of



Meineke's display in bank window.

the window had several jars containing about one pound of honey from various sources and a placard entitled "Honey." This placard told what honey is, how it varies in color and flavor, and how delicious a food it is.

On a shelf above all the material that has been described, a rack was set up with a sign in the center telling how extracted honey is produced. To the left of the sign was a frame containing foundation and a comb drawn out far enough so that the bees had started to store honey in it. To the left was a frame of sealed honey ready for extracting and an empty comb from which the honey had been extracted.

By actual count, the bank has found that an average of 32,000 people pass their window every day. This exhibit drew larger crowds than any other exhibit ever shown in the windows of that bank. At times the sidewalk was so crowded that it was difficult to pass the window.

The window was partitioned off from the banking room and lights were burning at all times. This made it too warm for the bees, and frequent changes of observation hives were necessary. Two hives were used so that the bees could have a flight after three days.

Two articles were printed, in a paper published by the bank, telling about the "Bee Window."

Several other banks and stores made requests for similar exhibits. Some of these were too far away for us to handle conveniently, so they were referred to the secretary of the county association.

We consider this a very successful and economical way to advertise honey. There are many other ways in which an exhibit can be arranged with other lines of business.

Chicago.

THE HUBER LETTERS

Youth Recollections—Salutary Influences of Nature Study—the Sense of Scent in Bees—the language of Animals.

Lausanne, Nov. 1, 1831.

I have spoken to you sufficiently of our domestic bees and of those which, in our hives, may assume the name of "Sisters of Charity," you will recognize, under a name to which you have some rights, the true "worker" bees.

It is of the drones that I would like to speak to you, for they have a great role in their history, but you consider them as sluggards, do-nothings, fops, solely occupied in playing and frolicking, and almost in laughing, and I do not wish to attempt their defense as long as you have this prejudice; it would be taking the defense of the vices of which they are accused; allow me, however, to ask you to suspend your judgment towards them, as long as it is not proved that they deserve your contempt.

I also have had, as you have, some large and small fowl yards to watch. My father had a passion for birds; he possessed all those that we knew best because of their musical talent. The nightingale, the warbler, the canary, etc., had at Plainpalais a great aviary; a few trees and a brook preserved them there almost in a state of nature. They roosted in their aviary and appeared to be as happy as those that had no shelter but the trees of our gardens or of our orchards. It was there that your little friend, still clothed in long dresses, spent all the time that he could filch from the occupations required by his age and the will of his parents. It was there also that he acquired a taste for natural history and that his young mind was opened to beauties which have lost none of the charms that he found in them so close to the cradle.

Some friends of my father upbraided him one day before me, for leaving me too much time, according to their idea, for idling and amusing myself. I still thank the Lord that he inspired into my beloved father the willingness of permitting me to follow my taste for natural history. "Could he live in better company?" said he. "What does he hear from those innocent voices, those little beaks so pretty, even from those big ugly beaks, however homely they may appear? Is there any risk of their corrupting his little heart or spoiling his mind?" This jesting was not a jest; after a whole life I see in it an accomplished prophecy, if you will permit me so to speak. Did I already find a true revelation in what I could see and hear from those beings that had no other teachers than their fathers? Their language, which gave nothing to me but pure thoughts, was it not more intelligible and more lovable than if it had contained more wisdom? At the time of this writing, I have here, near me, two representatives of those that instructed my childhood, almost from the swaddling clothes, and I have the honor to be able to say to you with truth that I understand them now as I did then, and that they are still for me representatives of "August Truth."

I would like to be sure that you pardon me for making my own self the subject of these observations. I know surely, better than those who have had only a glimpse of beautiful nature, all the influence that it may have upon those whose principal study it has been during their whole life; that which I feel appears to me to be likely to encourage those who listen to me and do good to them, as it does to me.

My musical ear is known to you. It did not give me any better service than those of the physiologists who have most studied the music of birds. Our savants ascertained before I did that it was possible for us to imitate only distantly the language of those small beings who have more or less the gift of charming us.

My pupil does not doubt that her

old teacher has done all he could to ascertain the cause of this difference. I believe that I have found out, and I am not alone in that conclusion, that the birds do not have the same scale of music that we have.

The nightingale has a greater connection with our harmonic scale than any other; of all the birds that sing well, it is the easiest to imitate. The nations of the North (I am sure of it) have also a scale which differs much from ours. Strike upon your harpsichord the sharps only, those five notes are the only ones that we hear in the old tunes of the Caledonians. Louis Necker (1), your dear relative, asserted it to me and made the experiment of it, before me, upon his bagpipe. You know that this instrument is the one which the Scotch Highlanders use to lead their soldiers to battle and often to victory. Another notion which I believe to be correct and which I also owe to my formerly good ears, is the difference observed in the scale of the songs of birds, that is, in the distance between the notes of those songs following one another; this does not prevent them from singing in tune; in all my life I never heard them give a false note.

(Note 1. Louis Necker, oldest son of Mrs. Necker-de-Saussure, the author of 'L'Education Progressive,' grand-nephew of the Minister of Finances of Louis XVI, was a professor at the Academy of Geneva, where he taught geology and mineralogy. He spent the 20 last years of his life in the Hebrides, in the Island of Skye, which offers great interest in regard to mineralogy, and where he found gratification for his taste for natural sciences. He published a book on the birds of Switzerland, which is greatly appreciated for the information that it gives on the migration of birds, etc.—Ed.)

Am I prejudiced? If there are beings so unfortunately organized that neither their heart nor their mind can understand the language that nature uses to please them, to charm them, to console them by that which is produced in the natural concerts, in those of which the wildest woods give us such pleasant sensations, we must pity them and be the more thankful that this source of pleasure has not to be withheld from us; I hope that some great compensation has been granted to them.

You will understand, dear Elisa, that it is of botany that I am thinking now. Allow me, in spite of my age, to offer you a bouquet; let it be composed in such a way that you will find nothing to criticise in the harmony of the colors with which the flowers that compose it are adorned.

Those colors, their diverse shades, are the fundamental notes of their scale, their distribution upon the petals is calculated for our enjoyment. Man, and man alone, is qualified for the enjoyments that a masterly hand has seen fit to prepare for him. You have had children to care for and to make happy, my dear girl; remember how often a bouquet, a

single blossom has given them pleasure. Those little creatures were also provided for, by giving their mother a voice and more readiness than to their brothers or to their husbands for entertaining, for consoling of their little sorrows this immense portion of the human race. No, no, that one of all the beings which is most enriched through so many favors must not be what he sometimes appears to be—ungrateful!

While seeking to ascertain the effect of odors upon insects, I found only the bees among which they are worthy of note; that of the honey attracts them particularly; you know that which is left exposed is very soon discovered by those insects. That which is more singular and less known is that they keep for a long time the remembrance of their discoveries. Some bees, that had found honey scattered upon a window sill, came back six months later to seek that which might have been left at the same spot. This observation was made at Yverdon and deserves to be retained as the first proof that we have had that our favorite insects have been granted the gift of memory.

The odor of pollen, imperceptible to our senses, is probably perceptible by those of the insects which find in the fecundating dusts the food which suits their young best and which are accustomed to seek them. The more odoriferous flowers hardly seem to attract them when their pollen is not visible or is not in their reach.

If a few of the odors, among those that appear the most pleasant to us, reach them without fail, all those that displease us and that I have tried, repel them and cause them to fly away as soon as they perceive them.

It is rather curious to see at the same moment the two opposite effects which equally prove this assertion.

Spread a little honey upon your window sill. The bees which take notice of your gift will soon come to enjoy it; you will see them stretch out their tongue and dip its extremity in the honey. Seize that moment to cover this honey with pulverized camphor; the bees will take flight at once. This spectacle may become still more curious and more instructive: Cover only a part of the honey with camphor, which they dislike; the bees will not fly away; you will see them turn as far as they can away from the mixture, which attracts and repulses them equally. They will behave in such a way that only the extremity of their proboscis will reach the uncovered honey. This experiment deserves to be repeated and varied with the use of other attracting and repelling substances. It may at least amuse you.

The voice: The early travelers who spoke to us of the animals inhabiting the islands of the South Sea asserted that they are dumb. Has this been confirmed? I do not know it, but what you and I know very well is

that those who are born in Europe, Asia, Africa or America are not dumb, but are on the contrary endowed with organs that facilitate their intercourse with their own kind as well as with their young. If we are ignorant of the language of animals inhabiting strange countries, we can ascertain in our cows and in their males that nature has furnished to them, as to any other animals with which we are acquainted, the means of telling each other all they need to know, and especially to be understood by their young. This has been confirmed by travelers to different parts of the world, where animals that are strangers to us, exist. I have never heard them, but you have no more doubts than I have that the lioness and the tigress can inform their young of what is suitable or harmful for them, and that their speech has mutual charms for them, even though the terror that such voices cause may be the only effect which they have upon the human organs.

colony in the King hive, came out of winter quarters queenless. The Doolittle queen was bought late in the spring of 1891. I knew nothing about bees. The directions told how to introduce the queen to the bees, but said nothing about introducing the bees to the queen. After reading the directions, the cover was removed from the hive, and the cage containing the queen was laid on the top of the frames. Here is where something happened that I have never forgotten. There was great commotion among those orphan bees. They seemed at once to get the odor of the queen, and every bee directly and instantly came head on toward that queen in the cage with wings and buzzers singing that happy, joyful song that I have since learned so well when a colony of discouraged bees finds out that a strange mother has adopted them as her own and saved the life of the colony.

Most wonderful instinct. Or was it their memory? Did they remember when they had a queen mother? Here I had my first lesson. I was so interested it seemed that I could hear those bees talk plain English, and it seemed I could understand every word they said. Of course it had been my intention to go according to directions and let the bees eat out the candy, which would release this very important mother bee. But those bees said "No; turn her loose; we want her at once, we cannot wait." As ignorant as I was, those bees had convinced me that no so-called introduction was necessary on their part. And it didn't seem possible that the queen could do any harm to the bees. So I took a chance and turned Mother Bee loose among the black bees. Here was where they showed they had not forgotten how to treat a mother bee; first one and then another would feed her. They formed a circle around her with their heads all toward the queen. The queen in the center, moving very slowly, the bees backing up as she moved forward. I thought it wonderful; and it was, and it is still wonderful. It was about this time that I found out that there was such a thing as a Bee Journal. So the American Bee Journal was signed for, and we have been reading it ever since. With nearly every issue with articles about how to introduce queens, I sometimes wonder if all those fellows that have been telling us how to introduce queens have been successful themselves. If they are not successful, I ask: Do they know why? If they lose queens they have received by mail through supersedure, do they know how?

It seems to me that we should study the bees more and the queens less. We know what the queen will do. So let us find out more about what the bees will do. The queen is easy, but it takes a lot of study to know your bees.

Liberty, Mo.



Big swarm from an early package.

A Big Swarm.

The picture shows a big swarm of bees which issued from a colony built from a three-pound package. The package was received from the South on May 11, 1923, by George W. Colvin, of Russell, Iowa. The swarm issued on August 1. The package of live bees is coming to be a popular method of making increase or of replacing winter losses by northern beekeepers.

THE BEGINNING OF BUSINESS.

By J. F. Diemer.

The first queen I ever saw was bought from G. M. Doolittle. My whole apiary, which consisted of one

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

STRAW MATS OR OILCLOTH

I noticed something in your journal about an oilcloth or something similar being placed on top of the brood chamber, apparently for warmth in wintering. Is this so. I didn't know that anything should ever be placed over the brood frames before the cover is placed, unless, of course, supers must be added.

MISSOURI.

Answer.—In many cases beekeepers put nothing over the top of the frames except a flat cover or top, which is raised and put above the supers, as tiers are added. In other cases they add what is called a honey-board, or inner cover, especially when they use an escape board, or a board provided with holes for feeding. But we do not like the wooden cover immediately on top of the brood chamber, because the bees always glue it fast and it generally comes off with a jerk when you pry it loose. So we prefer to use a cloth on top of the brood. An oilcloth will do for summer. Some sort of gunny cloth or of burlap of proper size is used by many people. In addition to it, we use a straw mat, which keeps the heat off in summer and the cold in winter. But straw mats do not seem to be much in favor.

For winter, before putting on the absorbents or warmth preserving cushions, we like to use a soft cover over the bees, removing the oilcloth, and if we did not use straw mats, we would use covers made of old carpets or rugs, cushions of some kind, and the absorbents on top of these. Of course, when this is done, a super is needed under the top cover.

We much prefer this method of packing bees for winter to any other.

1. Do bees build comb while fed on sugar syrup alone?

2. Was Langstroth a Catholic priest?

MISSOURI.

Answers—1. Yes, bees can build comb on sugar syrup alone, and Huber succeeded in getting more comb built out of sugar syrup than out of honey. But bees need pollen to keep up their energy, and it is the opinion of most scientists that they can build comb with less wear upon their bodies when they have access to pollen.

2. Langstroth was a Congregational minister, and not a Catholic priest.

FOULBROOD

1. Disease has broken out in my apiary; in some frames the cappings are perfectly healthy looking, concave and yellow color. No human could detect trouble by the looks, but upon tearing the capping open, I find the decayed mass to be of a grey color, and some of it is perfectly white, with a pink color mixed in. This is not chyle nor pollen, nothing but a decayed dead bee.

2. Your Journal carries the advertisement of a disinfectant, put up by some "Dr." guaranteeing to clean up the disease. Is it reliable?

CALIFORNIA.

Answers.—Are you sure those chrysalis are dead? Your description does not fit that of any foulbrood. The transforming bee has a grey color in the cell when it is changing, especially at the head, the abdo-

men being white. We have often had perfectly healthy pupae sent to us for diagnosis, and this may be the case.

The principal symptoms of American foulbrood are: brown coffee color of the dead larva,ropy condition of the mass, stretching out, when taken with a toothpick, two inches out, like india-rubber, and, lastly, a carpenter's glue odor. If such symptoms are there, then your bees have the disease.

2. The disinfectant is good when thoroughly used, but every cell must be soaked, and it is usually found cheaper to melt up combs containing dead brood.

MOVING BEES

I have some bees that I will have to move about a mile, this fall. Is there any danger of them returning to the summer stand during winter flights?

ILLINOIS.

Answer.—The possibility of the bees returning to their former home depends a little upon the configuration of the country. If they have to go over woods, or rough country, there is little probability that they will return, in winter. But if the country is open, as I believe it is in your section, there is a strong possibility of many of them going back, if the weather is nice. In that case, it becomes necessary to inform them quite fully of the fact that they have been moved, and this may be done by disturbing them greatly at the time of their first flight. Either transport them on a warm day, having previously closed the hives so none will be out, then disturb them a great deal before releasing them. In addition, place a slanting board in front of the entrance, so they may know the conditions are changed the very minute when they take flight. Dr. Miller thought that bees forgot the location of their home during winter, if in the cellar; but I have had very positive proof that they remember it, even after that length of time. Of course, the farther their new home is from the old home, the less danger there is of their remembering anything about it. But they ought to be thoroughly warned of the change. For that reason, I like to transport them at the first warm day of early spring, when I am sure that they will take a flight at once.

TREATING FOULBROOD—SIZE OF HIVES, ETC.

1. Would like to know how to use sodium hypochlorite, whether to spray the combs, or soak them in this solution, for American foulbrood.

2. Why not use the bee escape method for taking bees out of hive bodies containing American foulbrood, as they do with supers after the honey flow, instead of shaking bees?

3. When bees build their combs in nature, they build them crosswise. Why not put frames in the hive crosswise?

4. When moisture runs out of the hive in liquid form, is the colony bad off?

5. When a colony has laying workers, beekeepers advise to split up the colony among the other colonies to get rid of them. I have found it is better to take the colony about 25 yards and brush all the bees out

of the hive and set the hive back to its old position; it won't be difficult for the bees to find their hive, because they are all fielders, but it would be difficult for the laying worker to go back into the hive, for she has stayed in the hive for a considerable time.

6. What is the right number of stories for bees in the winter, if it is a full-size colony, in Modified Dadant hive?

7. Would honey mixed with sodium hypochlorite be good to feed back to the bees? What would be the proportion?

OHIO.

Answers.—1. Both sodium hypochlorite and alcohol-formalin may be used in disinfecting combs of American foulbrood; if the cells are all uncapped and contain no honey. Mr. Demuth is authority for the statement that alcohol-formalin may be used over and over. In his experiments the combs were just immersed in a solution. But we are of the opinion that it would be more sure of cure if the diseased combs were filled with the solution by injecting it in. We have here a machine for filling combs, with syrup, or honey, or any liquid, invented and patented by an Italian, Count Gallesio Piuma. We consider it very efficient for filling combs, though the question of advantage in manipulations is still to be settled. Count Gallesio Piuma wants us to act as his agents in placing it in America; but we want to be sure that it does the work, and we thought it better for that disinfecting than for any other purpose. So I asked Mr. Cale to make tests. Here is his statement:

"We have found the Piuma spray machine works efficiently in cleaning dry combs from foulbrood colonies. To prepare combs for treatment, we extracted all of the honey from them and gave them to the bees of the diseased colony to clean up. It is not possible to treat combs containing cells of sealed honey or cells containing the larval remains of diseased brood. We used both Hutzelman's solution of alcohol-formalin and the sodium hypochlorite solution called 'Be-Health.'

"There were some difficulties, however, in operating the machine. A fine spray-like mist is thrown off which fills the air about the operator, and, in the case of the formalin solution, this mist irritates the lining of the lungs, causing violent coughing and difficult breathing. We would not care to use this solution in the Italian machine again. The hypochlorite, however, is harmless.

"The cost of this machine is rather high if it is to lie idle and only be used for the occasional treatment of combs in this way.

"We also used a small hand-pressure sprayer with good results."

2. Bees will not leave the hive when they have brood to take care of and a queen. Only the field workers will leave and you would get tired of waiting, with the bee escape, as you say.

3. Building combs lengthwise or crosswise of the entrance is not at all regular with the bees. They build any way, even at right angles, in nature. This question of the proper direction to hang combs was thrashed over again and again in Europe. They call the lengthwise combs "cold frames" and the crosswise combs "warm frames." But the fact is most people prefer the way adopted by Langstroth years ago (cold frames).

4. If the colony is very strong, it will melt the moisture that may have congealed on the outside combs, on any fairly mild day, and you will see it running out of the entrance without the least injury. If the

colony is so weak that this moisture may accumulate around the bees in the way of frost, it may drown them. If you use absorbents above the combs there will be little or no frost thus accumulating. It will be absorbed above.

5. You give us No. 5 as information of your own experience. But I must say that it does not always happen thus. The French author, Perret-Maisonneuve, of the latest work on queen-rearing, stated in the *Apiculture Francaise* for September that he never succeeded in "losing" the drone-laying workers in that way. Probably the difference is caused by the number of drone-laying workers, which sometimes amounts to dozens in the same hive. Our experience tallies with that of Perret-Maisonneuve, although we know that many people have succeeded in "losing" the drone-layers. But no one should depend upon this too confidently.

6. We never want more than one brood chamber, well supplied with honey, of the Modified Dadant or regular Dadant hives, either for winter or for spring. It is large enough to contain as much honey as needed for brood rearing and all the brood that a first-class queen can lay.

7. This matter has not yet been sufficiently tested for a positive answer, but I don't feel favorable to such a mixture, except on a very small percentage. Better extract the honey first and boil it to kill the germs.

WINTERING IN DADANT APIARIES

1. Please give me the method of the three-side packing as used for winter in Dadant's apiaries, as I see the picture on page 543, November Bee Journal, but don't just understand it. Also, what do you mean by sealed covers, mentioned on lower left-hand corner on page 544? I have never packed my hives for winter yet in packing cases. I have thought I would try it sooner or later. I have always provided a good windbreak for them and used an empty super packed with leaves directly over brood frames, using a double gunny sack over frames.

2. I am changing to Modified Dadant hives. Do you leave all eleven frames in through winter, or would it be advisable to remove some and fill in with leaves? Our winter is never very severe.

MISSOURI.

Answers.—1. Our method is very much as you describe yours. Sealed covers are covers just as the bees have them when they have either a honey-board or other impervious cover, glued over with propolis. This retains the moisture which escapes from the bees, and, when very cold weather comes, that moisture congeals into ice and sooner or later wets the bees in thawing. In order to do away with this trouble, bee-keepers do just as you describe, use a gunny cloth over the frames and fill the super above with dry leaves or other absorbent. I have often compared this cushion to a woolen blanket over a man's bed. It does not let out the warmth, but lets the moisture escape. People have objected to such a cover, pleading that it is better to leave the hive just as the bees fix it, with sealed covers. But we know better. In average winters, sealed covers are not injurious, but when we have a very hard winter we recognize the advantage of absorbents instead of sealed covers. The experience which I had in the winter of 1884-5 was a convincing one.

As to the packing, we simply use a net of wire mesh, such as they use for chicken fence, of proper length and height, to hold the leaves, straw, or other material that makes a good windbreak and shelter when

held close to the hive. We leave the front open, as shown in the picture. Our winter circumstances are very much like yours, warm days, now and then, with cold storms between.

The question of wintering is a matter of locality. We tried cellar wintering for 18 years and abandoned it because so many of the winters were warm enough to allow the outside bees to fly, while our cellar colonies were restless. We tried chaff hives, but they were too much confined in them and when a warm day came they did not know it. A few of our chaff hives are still in use by E. J. Baxter, of Nauvoo, but they have more opening than we gave them originally.

2. In the regular Dadant hives, we winter the bees on nine or ten frames. In the Modified Dadant, ten frames are plenty. If you have undersized colonies which do not occupy all the combs, you may remove some of the frames and use the division board with leaves on the outside of it. It makes a good protection, especially if the hive faces south and the division board is on the west side, which is always the cold side with us.

Packing cases are excellent for wintering. Our only objection is their cost and bulk. But if we were in a colder region than this, we would probably use them. Here a good windbreak is the most important thing. But if you shelter the hives well besides, you will have just that much better chance for safe wintering.

HUNTING BEE TREES

1. I am asking for your advice about bee hunting. I hear that bee trees can be located by the method of burning honey comb.

2. What kind of scent should I use? I hear that some hunters mix oil of anise with alcohol.

3. How can I keep bees on bait (when bait gets cold) till I locate the tree?

VERMONT.

Answers.—1. I cannot give you much information at first hand, because I only found three bee trees in my entire experience. It is true that I never made a practice of bee hunting, and found these accidentally.

There has been published, by a Columbus, Ohio, firm, some years ago, a pamphlet of 72 pages entitled "Bee Hunting." The author recommends making a fire in the woods, heating some large, flat stones in it and burning old comb on these stones. If you did not succeed with that method, it may be that there was some wind and that it carried the odor of the burnt comb away from the direction where bees were. Or it may have been that there was some honey to be found in the flowers, in which case bees would not be attracted by the burnt comb. This man carried a hot stone from the fire, in the distance, towards the direction where he expected to find bees.

2. The oil of aniseed which he recommends also is simply mixed with water. But it may be better to have it mixed with a good grade of alcohol. I don't think wood alcohol would do.

3. As to the amount of comb to burn, that must depend upon your greater or less success. Old comb, the older the better, would give more smell than new comb. Of course, if it is burned, it is used up and cannot be kept for another trip. But if you find a single tree, you can have old comb in sufficient amount for all your requirements.

You should not hunt bees on a cold

day. Do it when you may be quite sure that you can follow them home.

This bee hunter often caught bees at watering spots and fed them a little by putting them in a tumbler in which a little honey had been smeared. A bee filled with honey is a little surer to go home than one that is just roaming, and, besides, she is a little slower on the wing.

The oldtimer, Olivier De Serres, put honey within a reed and let several bees get into the reed. They would do so after they became acquainted with it. Then he would release one at a time, following each bee as long as he could, before releasing another.

The important thing is to attract bees and feed them till they make a bee line. The stronger the feed, the quicker a number of them will be baited. The whole thing is a question of ingenuity and management.

CARNIOLANS OR CAUCASIANS

How would the Carniolans and Caucasians compare with the Italians for this section?

LOUISIANA.

Answer.—I have no fault to find with the Carniolan or the Caucasian bees, except that they are much nearer in color to the common black bee than the Italian bee. Therefore it is much more difficult to discover mismatings.

We know that it is necessary to breed from a pure race, if we wish to retain the qualities of a race. It is true that a hybrid will sometimes possess the qualities of both races; but in most cases the descendants of that hybrid race vary greatly and prove worthless.

On the other hand, the Italian race has characteristics which readily show the mismating, when mixed with the common race. It also possesses most of the qualities of the Carniolan and Caucasian. For that reason, we favor the Italian, to the exclusion of other races. However, as I said before, we have no serious objections to offer to the cultivation of these races, especially in cold climates.

WINTERING IN CELLAR

I put my bees in the cellar October 25; before placing them in the cellar I built an extension in front of hives with wire screen, so they can't get out, but they are very uneasy. Would it be best to take screen off? I have a good, dark place for them in our fruit room.

NORTH DAKOTA.

Answer.—The cellar should be at such a temperature that the bees will be quiet and not stir. If they try to get out, they will worry and die. Have a thermometer and see what the temperature is. If it is below 42 degrees, it is too cold. If it is above 50 degrees, it is too warm. I am inclined to think your fruit room is too warm, but the thermometer alone can tell this. We like best a temperature of about 45 degrees. The cellar must be quiet, dark and sufficiently cool.

We never use a screen in front of the hives. Very few bees try to go out, but those that do might as well be lost, for they annoy the others and make them restless. We leave the entrance wide open and bees do not try to get away.

The honey in the hives should be of good quality. If your honey is not good, that may be a reason for their being restless. We have often fed bees on top of the combs with sugar candy and they keep very quiet on it.

MAKING MONEY OUT OF BEES

By Hy W. Sanders.

Some months ago there was an interesting discussion on in the American Bee Journal as to whether in fact there was "any money" in beekeeping. At that time I took the affirmative, and since then I have come across an instance of profitable beekeeping which so well illustrates the contention that further particulars may be of interest.

Although it is over a year since I left Manitoba, I have been in close touch with the beekeeping of that Canadian province. I firmly believe that it is the greatest bee country of the North American continent, and I may remark that to come to California with so great expectations of the "Golden State" and to find beekeepers sickened by an almost total crop failure after several lean seasons has accentuated the contrast. A visit of a Manitoba friend has furnished the matter for this beekeeping story, and the accuracy of the same is confirmed by what I have heard from Mr. L. T. Floyd, that most energetic of provincial apiarists, who is in charge of the beekeeping work of the Manitoba Provincial Department of Agriculture.

In the spring of last year a partnership was entered into by Messrs. Pink and Taylor, both of them well-known beemen in the vicinity of Winnipeg. Mr. Pink in particular is a pioneer beekeeper, having had bees for many seasons, and having thus a thoroughly practical knowledge of the peculiar climatic conditions of the territory, and in particular being one of the most successful of Manitoba's beekeepers in wintering bees—that being the most serious problem of the far north. Near his home he had a cellar nine feet deep and with a thick layer of sawdust insulating it beneath the water-tight roof. This he used to visit every day towards night, and during the latter part of the winter he would open up the doors and let them stand open all night, so that the hundred or so colonies below had plenty of fresh air. He was a believer in leaving them in

the cellar till somewhat later in the spring than was commonly practiced, and he certainly got results.

The partners began the season with around 160 colonies. Pink had about 100 and Taylor had 70 which were located at Beausejour, the little town to the north of Manitoba, where the Polish settlers have for many years produced large and unfailing crops of honey in the awkward Polish hives that have been illustrated in the bee journals from time to time. In addition to this number of wintered-over colonies, they ordered fifty-four-pound packages of bees with untested queens from Louisiana for delivery about the middle of May.

These latter came in good condition and were landed in Winnipeg on May 25. They were all strong with the exception of some half dozen, one of which was empty, the bees having escaped en route, and others having many dead bees. Once established in hives, however, they built up as well as the best of the wintered-over colonies, and most were up to swarming strength by July 1.

Exact records were not kept, as the two beekeepers were fully occupied with other matters. However, at the end of the season they had taken off 24,000 pounds of honey and they had around 350 strong colonies of bees in good shape to put away for winter.

The honey was all sold in the city of Winnipeg, and all disposed of before December 15. The price received ranged from 15 to 25 cents for extracted honey, and 30 to 35 cents for comb honey, though comparatively little of the latter was produced. At the end of the season they sold off the entire outfit as a going concern for \$7,000, lock, stock and barrel. Anyone with a pencil and paper can figure out if there was any money in bees in this instance.

The work in the apiary was all done by the two partners, except for the hiring of one man for a month to help in the extracting house. Pink worked the apiaries, of which there were two, a home yard and one six miles out. Taylor had a Ford truck,

which they bought for \$275.00, and did all the hauling, honey selling and general business connected with the outfit. They sold the truck at the end of the season for \$240.00. It had cost nothing for repairs throughout the season.

Swarming was controlled by giving unlimited room to the bees. They were inspected regularly, and when queen cells appeared the brood nest was broken up and distributed through the supers. Some colonies were Demareed, but they ran short of queen excluders and found that enlarging the brood nest in other ways was effective. There were a few swarms, most of the increase being built up by forming nuclei, the long honey flow allowing them to grow speedily into full colonies.

Before the opening of the season they bought and set up 400 supers and a hundred tops and bottoms. In addition, Mr. Pink had some 300 supers, mostly with drawn comb that had accumulated in previous years. The extracting was all done in a six-frame, reversible machine, which, however, was turned by hand, no engine being bought. The honey was packed largely in 5 and 10-pound pails, though about three tons was put into glass. None was sold in bulk, but on the contrary quite a large part of the honey was disposed of at a good price in three-quarter and one-pound glasses.

A big factor of their success must undoubtedly be conceded to the wonderful honey-flow. It will be seen that the average crop was better than 100 pounds per colony. Yet it is an undoubted fact that in the past ten years there have been seven or eight when this much or more could be obtained with proper management. In small apiaries yields running to 250 pounds per colony have been not uncommon, and the honey is mostly of uniformly excellent quality. Another factor of success was the small operating costs. Here there were no costly jobs of shipping bees to the location, very little expensive wage bills for hired men, or heavy payments and interest on a large investment. The fact that they sold out for \$7,000 makes the success somewhat spectacular, but even without this there was a satisfactory profit in the season's work, and their prospects for future progress would have been excellent, if judged by the results of this one season's work.

CREATING A HOME MARKET
FOR HONEY

By Charles H. Chesley.

Honey is a product that usually finds a ready sale, but sometimes it pays for honey producers to cater to a home trade rather than to sell in wholesale markets or through distant advertising. Did you ever consider how easily the home market might be broadened and extended? The methods here advocated are not practiced in their entirety by any one person that the writer knows of, but the ideas have come from sev-



R. S. Taylor, of the firm of Pink & Taylor.

eral different beekeepers and have been incorporated into one article.

It seems to be a fact that many people in every community do not like honey, simply because they do not know how to use it. The first thing, then, to be done is to show the public how to use it. In one case a beeman had a lot of pamphlets printed and gave them away among his neighbors. The pamphlets gave recipes for using honey in cooking and making confections. He found this method materially increased his local sales.

A producer of extracted honey puts the product up in pint and quart glass jars. He sells for a price that includes the jar, but offers to purchase the jars back if anyone wishes to return them. On each jar is an attractive label and a few general directions for using honey are printed, as well. He buys the jars at wholesale, so he sells them at about what they would actually cost the buyer, anyway. As a result, few purchasers bring back the jars. This method will materially increase the sale of honey in any village or city. In one case the beeman incurred the enmity of the merchants of his town because of his persistent advertising, and because he would not allow them to make as much on his product as they could make upon a cheaper western or southern honey. As a result they got together and refused to handle his product. For some time he had sold through the local stores, and his recipe pamphlets had been distributed the same way. Not discouraged, he advertised in the local paper, using space to tell the people why his product would no longer be offered in the stores. He also announced that he would make a weekly delivery within a certain radius, if patrons would telephone him their wants. He not only increased his sales, but could not supply the increased demand. He then bought different grades of honey in quantity and put it up in cans, like his own, but sold it under its true name, at a price less than that produced by his own bees. He always told his customers when he could not furnish his own brand, and explained to them exactly what they were getting for their money. The profits made on the imported honey paid for advertising and delivering.

There is always a certain market for high grade comb honey, but the man who would build up a considerable business will probably find it to his advantage to furnish extracted honey. He should have a brand name, which, of course, may be protected by law, and he should sell the honey under different grades. He will have clover honey and buckwheat honey, and other brands as well. It is a fascinating game and one worth trying out. The sale of honey can be increased in almost any community by proper advertising methods.

Recipes for making many dainties with the use of honey will be found in good cook books, and many such

appear in farm and household journals from time to time. In addition, progressive housewives will find many ways to use honey in cookery. These may be passed on to the public by the printed recipes.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost Of Paint Seventy-Five Per Cent

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., discovered a process of making a new kind of paint without the use of oil. He named it Powder-paint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to A. L. Rice, Inc., Manufacturers, 23 North St., Adams, N. Y., and a trial package will be mailed to you, also color card and full information showing you how you can save a good many dollars. Write today.

Burleson's Three-Banded Italian Bees and Queens

One of the oldest, largest and most successful shippers of combless packages in America, ships only on sugar syrup, and guarantees safe arrival and no brood diseases of any kind. Ten per cent books your order. 2-lb. package, with select untested queen, \$3.75 each; 25 or more \$3.50 each. 3-lb. package, with select untested queen, \$5.00 each; 25 or more \$4.75 each.

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To buy our guaranteed bees and queens for spring delivery. Booking orders now. One 2-frame nuclei, \$3.75; 25 or more, \$3.50. One 3-frame nuclei, \$5.00; 25 or more, \$4.75. Queens free if 50 or more are taken. Package bees same price. Queens, one untested queen, \$1.50, 25 to 50, \$1.25 each. Our early order discounts from the above prices will interest you; get them before placing your order.

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WITH TOAST OH BOY!

Did you ever try it? Honey on toast? If you haven't, you've got a big treat in store. One young woman said, "I had become tired of eating plain toast, nor did it appeal to the children any more. But, once I added honey, my whole family kept me busy serving. Honey is certainly delicious!"

Try it tomorrow morning! All quantities of honey from one half-pound glass at—cents up.

CHARLES JENSON

AUBURN PARK

CHICAGO, ILL.

We have had a series of 20 model advertisements of honey prepared by an advertising specialist. This series will provide the beekeeper with suitable copy for his newspaper advertising for all occasions. Simply change the name and address on the ad to your own, and it is ready.

The above is a sample of this series. The entire series of 20 postpaid to any address for 50 cents.

We offer a full line of selling helps—labels, signs, folders, etc.

Everything in printing for the bee-keeper.

AMERICAN BEE JOURNAL
Hamilton, Illinois.



Provincial champion demonstration team for Manitoba, 1923. Islay McKinnell right, Ella Carson left.

BEEKEEPING TEAM WINS MANITOBA CHAMPIONSHIP

By L. T. Floyd.

The Manitoba Department of Agriculture, in an endeavor to train the young people of the different country districts for future leadership and make farm life more enjoyable, have developed Boys' and Girls' Club work to the point where it now has a membership of 30,000.

In these clubs demonstration team work occupies an important position and a wide range of subjects are covered in the different clubs where they vie with each other for the final championship. The prize winners in the preliminaries win a trip to Winnipeg, the capital city, where they are entertained by the Department of Agriculture and various mercantile concerns for a week, and during that

time these teams each meet in the finals, and on the last evening the six highest scoring teams complete the contest and the winners are awarded gold medals.

The team of whom I am about to write competed in the 1922 contest and secured seventh place and returned home with a determination to do better next year or die in the attempt. These girls came from Teulon, about sixty miles from Winnipeg, and are named Ella Carson and Islay McKinnell. They were both brought up among the bees and were cousins, the father of Miss McKinnell having kept bees for twenty years.

Realizing that one of the most important points required to win in this competition was a subject in which the public were interested, Mrs. Carson, their leader, after attending the large and enthusiastic Beekeepers'

Field Day held at Old England upon the occasion of the visit of Mr. Frank Pellett to the province in 1922, went home with the determination to try out beekeeping as the subject for her next demonstration, feeling that at the same time it would be doing some service in advertising the food value of honey.

She first secured all the available literature sent out by the different state and provincial governments until her home became a regular library of bee books and papers. She then faced the very difficult task of which all beginners in beekeeping are familiar—that of "boiling" this information down to a point where it could be applied to the task in hand. Her success speaks volumes for her ability in this line, but right here she wants me to acknowledge her thankfulness for the prompt response and ready assistance given her by those who helped by forwarding her this literature.

The demonstration began with an opening address by Ella, who, after the team pledge had been repeated, gave the requirements for a beginning in beekeeping and displayed a chart with some hints in handling, and then demonstrated with a ten-frame Langstroth hive and supers the necessary supplies needed, while Islay made honey caramels on a small oil stove on the platform. After this, Islay gave a talk, illustrated with charts, on the food value, flavor and color of honey, while Ella made chunk honey from a comb and jar of extracted. In the next address, Ella talked on the life history of each of the inmates of the hive, showing charts descriptive of the manner in which the workers secrete wax and build combs. She also described the growth of beekeeping in late years and the value of bees in fertilizing the flowers. Islay then finished with a general talk on honey, where she advised those present to use more honey, stating that she knew of a family who had eaten 240 pounds of

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies

Write for our terms and prices

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Booklet, "Simplified Beekeeping for Beginners" free

Write for catalog

W. T. FALCONER MFG. COMPANY, Falconer, (NEAR JAMESTOWN) N. Y., U. S. A.

"Where the **BEST** Beehives come from"

honey in six months and still called for more. After this, questions were answered and the demonstration closed with their beekeeping song entitled, "Everybody Calls Me Honey," etc.

This team had one disadvantage from which teams demonstrating with furs, textiles, etc., were not bothered, in that at each demonstration, of which they gave three, the crowd on the invitation of the demonstrators threatened to devour their whole stock of dainty honey cakes, candies, etc., and leave nothing for the next time. At each demonstration, the stock grew smaller and smaller, but in spite of this the girls, urged on by the applause of many enthusiastic beekeepers in the audience, fought their way through to victory, winning with a score of 98% over the next highest one on milk drinks with a score of 97%.

We are planning to make this demonstration a feature of our next beekeepers' convention.

These demonstrations were judged by Mrs. Gordon W. Randlet of Fargo, North Dakota, and she was so pleased with this exhibit and talk that she invited the team to visit North Dakota and demonstrate in a similar manner next winter.

DAKOTA OR ILLINOIS?

In "Burr Combs," in November American Bee Journal, it is noted that our friend Cale proposed to transfer Dakota bee pasture to Hamilton.

Such an undertaking would certainly prove interesting to the bee-keeping world, for Dr. E. F. Phillips says every locality can be made as good as the best, and the result of this progressive move will be watched with keen interest, and we all want to know of the progress as the work goes along, and especially the final results.

Sweet clover seed of all varieties can be planted in Illinois all right and may grow and bloom with all the luxuriance manifest in the Dakotas, but how about the soil and the climate that makes Dakota's sweet clover honey different from the sweet clover honey produced 400 miles further south?

Transportation of the soil can, no doubt, be provided, but the purchase of the soil itself will be a different proposition, for the Dakota farmer realizes what it is worth and is not eager to exchange even for gold dust.

Then, too, the rest of the bee-keepers of the U. S. A. are going to object when Dadants attempt to pry the world around on its axis so as to

put Hamilton in the same latitude as Fargo, North Dakota, in order that Hamilton honey might have that delicious flavor and texture that gives Dakota honey its superiority over all other sweet clover honey.

The study of the effect of soil and climate on the taste and texture of honey gathered from the bloom of the same species of plant in different localities, is very interesting and also an important one from the standpoint of the commercial honey producer.

Keep the good work going, Mr. Cale, and we will co-operate to our fullest extent, for the world needs good honey. We will secure the clover seed for you and contract for some of the best top soil—for the sake of experimentation—but you cannot have our climate, which is so very essential in natures process of secreting the nectar in the bloom.

W. P. Southworth.

North Carolina Meeting

The North Carolina Beekeepers' Association will meet in Washington, N. C., on January 17, for the eighth annual winter meeting. An interesting program and election of officers for 1924 will be the order of the day.

J. E. Eckert, Secretary.

MONEY SAVED

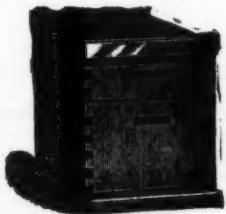
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Iowa Has Good Meeting

The Iowa beekeepers held a very enthusiastic meeting at Des Moines the first week in December. E. G. Le-Stourgeon, of San Antonio, Texas, was the principal speaker and was received with much enthusiasm. At the big banquet held jointly with the horticulturists, the hit of the evening was a song about "with long

hawn bees and the melons on the vine livin' down in Texas surely must be fine." Iowa beekeepers have a balance of several hundred dollars in the treasury and are trying to accumulate a sufficient fund to make sure that they will be able to carry on an advertising campaign sufficient to move the crop in case a glut occurs in the market.



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WASHINGTON BEEKEEPERS SURPASS 1923 GOAL

By B. A. Slocum.

A year ago a committee of twenty-five beekeepers met and discussed ways and means of developing the beekeeping industry of the state. Statistics were presented and then goals were set for the year 1923, as well as for a five-year period, 1923-1928.

The goal for 1923 was: To reduce the bee diseases 20 per cent; to reduce the number of box hives 25 per cent; to introduce 1362 pure-bred Italian queens into black colonies; to organize three associations; to take a survey of existing conditions in nine counties; to organize one boys' and girls' bee club and promote existing clubs.

Disease was decreased 15.2 per cent during the current year. This represents 53.7 per cent of the colonies that were diseased, consequently the year's goal was passed by 33.7 per cent.

The percentage of box hives was reduced 5.8 per cent. This is 42.3 per cent of the colonies that were in box hives, consequently the goal for the year was passed by 17.3 per cent.

One beekeepers' association was organized in Skagit County, and another, the state association, is in the process of organization. This was the only goal which was not passed. It would have been met if one county, which was considered at the time the goal was made, had been ready for an association. There are already twelve associations. The Peninsular Association, which comprises six counties, is the largest association in the state.

Three boys' and girls' bee clubs were organized this year. Since the goal for the year was one, this goal was passed. The following counties have clubs: Pierce, Thurston, Benton, Grays Harbor, Walla Walla, and Stevens.

There were 1922 queens imported this year to replace scrub stock. This passes the goal for the year by 560 queens. Mason County reports that 90 per cent of the colonies within the county were requeened with Italian stock.

The beekeepers are to be greatly commended upon this excellent piece of work. It shows what can be done when beekeepers co-operate and make a united effort toward a specific goal.

Queens and Cages.

For several years we have lost 50 per cent of all queens introduced by the candy method, and did not know why. Experience teaches that the attendants should not go into the hive with the queen, but that they should be replaced by young bees just emerged, and these may be from any hive, provided that the colony being requeened cannot supply them, as in the case of a laying worker colony. Queens can be successfully

introduced to such colonies, and for that purpose there is nothing better than the push-in cage. Release the queen and her attendants on the inside of a screened room, and when the queen flies to the window, slide a piece of cardboard between her and the screen and trap her in a Miller cage, and, holding the thumb to one of the openings in end, place the other to the hole in the push-in cage. If she hesitates to pass through, blow the breath on her gently and she will go in. Before releasing queen from the mailing cage, the push-in cage should be attached to an old comb having a few cells of unsealed honey under the cage, and at least one dozen young bees placed therein as above described. In the case of a laying-worker colony, they should be given a liberal supply of emerging brood from some other colony before attempting to introduce a queen to them. The young bees as they emerge will feed the queen and cause her to lay rapidly, producing larvae enough to keep the old bees too busy feeding them to pursue their disgusting practice.

W. H. Henderson, Florida.

ODDS AND ENDS FROM A PRACTICAL BEEKEEPER

In the December issue of the American Bee Journal someone wants to know of a good paste that will stick labels to tin and not come off. I have been using water-glass; it is the same thing that is used to preserve eggs. I am sure you will find it entirely satisfactory. All paint and drug stores handle water-glass. If it is too thick, add warm water. It is heat and water proof; you can use it on furnace pipes, and I have set pails in hot water to remelt honey for several hours, and if I did not take the labels off while they were still wet, I could not get them off, for as soon as they dried they would be as tight as ever.

I have been using the method of increase as given in "Practical Queen Rearing," by Mr. Frank C. Pellett, and I find it the most wonderful method ever published. It is possible to get increase and a full crop of honey from the same colony.

I did not like the idea of boring a hole in the back of the hive, so I put a three-eighths-inch rim on the hive and cut out in the back for the queen to go out and mate.

I use the all-silk tulle veil for protection, and I find instead of pulling it all the way down in front, as recommended, if you will sew a short piece of tape in front and back, and use two safety pins, and pull it down in back as far as in the front, it won't pull your hat rim down over your eyes every time you look up.

I extracted 2,200 pounds of honey this year from 31 colonies, spring count, and increased to 50 colonies. I have practically all of my honey sold at \$1.25 for 5-lb pails, by going from house to house and taking orders.

Jos. G. Schaeffer.

Ohio.

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Honey, mixed with water, makes one of the best anti-freeze mixtures known. It does not evaporate like alcohol, and, after once filling, it is only necessary to replace the water that is evaporated.

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For localities where the temperature

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American Bee Journal, Hamilton, Ill.

B-H

Sodium Hypochlorite Foulbrood Disinfectant Great Success in Past Season. Leading Bee Articles Praise Work of Hypochlorites (B-H)

AMERICAN F. B.

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Splendid results by feeding B-H. Feed mixture early in spring, the minute bees are out. Many have completely wiped out E. F. B. in this way. A few cents worth of B-H protects a colony for the whole season.

W. H. Lewis, a prominent apriarist in British Columbia, writes of his experience with E. F. B. in Am. B. Jnl:

"Commenced feeding your sodium hypochlorite and at the end of 21 to 24 days the colonies were positively clean of any sign of infection, and produced clean, healthy brood."

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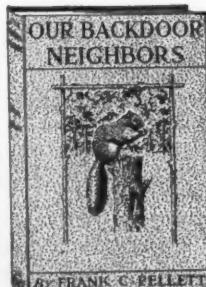
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AMERICAN BEE JOURNAL, Hamilton, Ill.

THE BEEKEEPING OF EAST AFRICA

By Consul L. Rosenkrantz.

(Translated from *Illustrierte Bienenzeitung*, December, 1922.)

Through the ancient war period, which brought with it the destruction of the glittering old Egyptian grandeur, it is readily accepted that the ownerless bee colonies of that region became wild and made their way toward the dense tropical forests of the equatorial region.

The bounteous flowers there offered their blossoms to overflowing fullness with life-giving nectar. The splendor of the continuous bloom, only broken for a short time during the yearly rain period, had as a consequence, that the bees here in the wilderness multiplied into the millions of colonies which set up their abodes in the holes in trees and rocks.

The number of their enemies among the animals is not great there and only the savages—the negroes—stole the honey away from them.

The size of the Indian and the African honeybees is about the same, but smaller than those which have been adopted farther north.

There is a marked difference in color between the two. The African bees, with the exception of the Egyptian, which have spread themselves over the whole of North Africa, are distinguished by the importance of the gray-gold hairiness in contrast to the Egyptian which, on the other hand, are banded like the Italian.

From whence this strong distinction which strikes the eye may have come in a race living on the same continent is very difficult to explain.

One can hardly go amiss, however, when one considers that on the Isle of Madagascar, not far distant from the African East Coast, one meets with black colored bees which may be the result of the hybridization which likely lent their coloring and hairiness to the bees of eastern Africa.

In any case, this condition has its own augmentation in the territory between the northern wastes and the Cape as already mentioned.

Man in his expeditions, be it in the forests, in the mountains or in the never-ending steppe regions, always encountered this insect, which drew upon the magnificently colored blossoms of the tropical flora and gathered its yellow golden nectar; wafting as vapor from aromatic and balmy fields of bloom, which only tropical sun, tropical earth and tropical moisture are able to engender.

One must have seen the overflowing picture of tropics with the variegated colors and shades of color, with its richness and originality imparted, to learn that in such fields of floral luxury the honey must flow for the bees extremely easy under such incomparable circumstances.

The spicy product of these active insects must have remained of indifferent interests but for the sweetness which became in time generally a

necessity to the negroes, and for this has developed the art of the so-called bee hunter, who seeks after the honey in holes in trees and rocks and turns its handling as an object of barter through the tribal necessity.

A change now came as the European significance began to be turned toward the formation of colonies in the dark corners of the earth and the rescuing of tropical raw products.

In the period of military development, cultural activity naturally could not be thought of. But with the entrance of the peaceful period and after the peaceful colonists, induced by the troops of occupation, had turned to settlement, the local administration busied itself with the development of beekeeping, not on account of the honey, but almost wholly to secure the wax, which, with growing European industrialism became a much sought article of commerce, finding use in the candle factories, cloth factories and in cloth finishing.

The mere decree of the colony governing body had the effect of keeping the production of wax within certain limits.

After the creation, however, of the aeronaut (the oldest commonwealth), which made the country farmer and the government responsible for the living and the pursuit of the blacks, the duty of wax development was taken energetically in hand.

After a number of efforts they adopted a certain form of beehives which answered the purpose under the circumstances.

The oldest inhabitants of the villages were given orders to peel the bark from the middle-sized trees. The bark thus obtained was bound into a cylinder, the ends covered; on the inside of the cylinder a few sticks were fastened criss-cross and an opening was made. In this way a beehive was built. Now these logs were hanged high in the large open spaces in deciduous trees and left to their fate.

For the enticement of the bees a bit of comb or wax was placed within the log, whose smell soon attracted a swarm, which entered this well prepared abode.

How much the bees of equatorial regions of Africa respond to the wax odor is shown us by the report of a Benedictine Father in his mission records. In the year 1898 a swarm of bees took up their abode in the wardrobe trunk of Brother Elias, because some yellow wax had been left there, and it was promptly used for their house of combs.

The keyhole of the trunk served as entrance and flight hole. The combs were fastened to the lid of the trunk. In the spring of this year a swarm further found lodgment in the vestry in a cupboard, where there were similarly, wax candles, and where they were left to build for a time, since the bees were very gentle and from whence a nice lot of honey was later taken. Later they

became troublesome, so that it became necessary to remove them.

This pleasing description of observation and experience shows to what great extent the bees have multiplied in these regions and how the odor of wax and a mere offer of opportunity of a home entices these insects to colonization.

Coming back to the officially ordered beekeeping, it was natural in the course of a few months, but usually after the end of the rainy period, to procure the honey and wax from the hanging hollow logs, which was undertaken by the whole village population, men and women.

In the late evening hours, armed with torches, drums, pipes and goodness knows what other instruments of noise, the entire human population of the district draws near the log beehives.

A few sturdy youths climb the trees with smoke brands, remove the under side of the log, and under this opening burning torches are fastened, whose smoke occasions the desertion of their homes by the bees. These logs, now empty of bees, are lowered, emptied of honey and wax, again the covering is made complete and the log returned to its former position.

It has become a wise decree of the government that the wax so secured reverts to it while the honey remains to the villagers. The days of the honey harvest have, therefore, become a feast time which finds its close with a "Boma," or village feast, at which the honey secured is divided.

From year to year the harvest has increased and the wax export of the few Dutch colonies of Dutch East Africa shows rapid advances from year to year.

Also, these colonies are directly affected by the times in civilized countries. There, where before the world war the planter with the help of his black laborers gathered growing products from his plantation, later desolation and decay entered, and as post war conditions came again, progress was resumed. The securing of wax has generally pursued a continual upward tendency.

FROM NEW ZEALAND

The indications are that there will be a very good season for the bees here in New Zealand. It is now October 15 and it is springtime in New Zealand. The bees are now working on the dandelion flowers and apple blossoms, which are coming into full bloom. The white clover, which is the chief honey-producing plant in this country, is now beginning to bloom. The main honeyflow starts here usually about the middle of November, from white clover chiefly, and ends about the middle of January. From the middle of January till the middle of February the bees gather very little more than what is needed for the daily requirements of the colony. Brood rearing here ceases in March and does not

commence again until about the end of July, when the bees begin to bring in pollen from the early flowering shrubs in the native bush and from the wattle trees.

The bees around these parts get their first spring overhauling during the last week of August, when an examination of the colonies should reveal brood rearing in several frames, with some emerging brood. November is the general swarming month throughout New Zealand, and with me it is usually about the middle of that month. The Langstroth hive is the hive that is universally used in this country. The ten-frame size is the hive that beekeepers here mostly use. The eight-frame one is hardly ever seen. There is a growing tendency for a larger hive than the ten-frame one, and the twelve-frame Langstroth hive is coming gradually into prominence. The advantages claimed for the twelve-frame Langstroth hive is that the queen has more room to lay in and that bees in such a hive do not require so much attention in such a roomy hive in the spring, there not being near so much trouble with swarming.

South Dakota State Meeting

The annual meeting of the South Dakota Beekeepers' Association was held at Mitchell on November 20 and 21. Dr. E. F. Phillips, Geo. H. Rea and W. P. Southworth were the out-of-the-state speakers.

The marketing problem received the lion's share of attention. Talks given on the subject aroused considerable discussion and also brought out the fact that South Dakota has its full quota of price cutters. The standardization of honey prices was recognized as one of the most important problems confronting the association at this time. A price committee was appointed to see what can be done along this line.

Co-operative purchasing and more effective methods of foulbrood control were also agreed to be lines of endeavor in which the association can be of service to its members.

The following officers were elected to serve through the coming year:

President—A. M. McBride, Hawarden, Iowa.

First Vice President—W. E. Dittmer, Canton, S. Dak.

Second Vice President—C. S. Lyles, Alexandria, S. Dak.

Third Vice President—L. A. Syverud, Yankton, S. Dak.

Secretary-Treasurer—R. M. Gilcreast, Brookings, S. Dak.

JAY SMITH

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WHERE DID FOULBROOD ORIGINATE?

E. G. LeStourgeon.

In the American Bee Journal, November, 1922, Ph. J. Baldensperger wrote:

"We all know—and when I say we I mean everyone who has seriously looked into the question—whether bacteriologists in their laboratories, or simple beekeepers, as myself—that bacilli are not spontaneous, but have existed, before bees lived, or alongside of them."

Aye, there's the rub. What other host is there of the dread bacilli that causes our two great bee diseases? From what source did the first colony that developed foulbrood get its infection? We feel safe in saying that no colony will show symptoms of American foulbrood unless it has had access to honey containing the spores of *B. larvæ*, or been furnished with combs or equipment from another colony that was affected. The same is true of European foulbrood, Acarine disease, Nosema apis and any others that might be proven to be either infectious or communicable. But this cannot always have been true. Some day, somewhere, the first colony of honeybees contracted each of these diseases. From what source did they get the first *B. pluton*, the first tarsemonus, or nosema?

If one agrees with Moses that "the Creator spake" and the bee came into being, a complete swarm, we cannot believe that all these diseases which our teachers tell us are found today on bees were present in that perfect swarm. When the primal curse descended upon all living things, this swarm could not have harbored all these diseases, else it would have soon succumbed and no bees would have remained.

If we believe, as do some theosophical sects, that the bee came fully developed to earth from another sphere of life, we cannot conceive that in coming she brought these bacilli and parasites along. Had she done so, she would not have lived to establish herself in her new world.

If evolution by slow and painful selection is our belief, we cannot think the bee would have survived

as a form of life if its parasites and diseases evolved with it. American foulbrood alone can wipe out the strongest colony it infects—can even sweep clean an entire apiary or neighborhood. No struggling species striving in the battle of life to establish itself could have stood this one bacillus, let alone the half dozen others and the horde of mites and similar parasites that we now limit the poor apis to be their only host.

Reasoning, then, from every angle, there seems to be some ground for the belief of those who claim that there must be some other source, now unknown to us, of these infections. Our scientists must seek it out so that we may be warned in time, and when the day arrives that our inspectors have sought out and destroyed the last infected colony, that we will not again wake up and find our bees reinfected from this unknown source and have to do all our inspection and eradication work over again.

Remember that we fought wheat rust for years by spraying and by carefully disinfecting seed, little dreaming that our garden or fence-corner barberry was treacherously giving aid and shelter to our enemy while our fields lay bare and no wheat remained for him to infest. Countless such cases have been found. We feel secure today in the thought that if we keep foulbrood honey and foulbrood appliances away from our apiaries we need not fear these diseases. Tomorrow we may find that an innocent appearing neighbor, of another genus, or mayhap another order of life, altogether, is the culprit who keeps alive and sows the dragon teeth in our pathway.

San Antonio, Texas.

(I have often thought also of the possibility of the foulbrood diseases being carried by some other agency than bees and thus appearing even where the bees are clean and healthy. But when we read that Dr. White was unable to reproduce the bacillus larvæ in anything but bee larvæ, and that it would not reproduce itself in the usual cultures, it looks very much as if the larvæ of bees were the only cradle for it. As to where

and how it began, the same question might be asked of any disease, whether of human beings or other animals, and even of plants in the vegetable world. It is "the struggle for life and the survival of the fittest," another Darwin theory which many people would condemn. But the struggle goes on just the same, and the fittest surely survive.—Editor.)

THOSE EARLY BEES

Our good friends, LeStourgeon, Wilder and Jes Dalton, have been sure that the honeybee was native to America because Columbus and other early writers made mention of honey and wax among the products of the new world.

In order to throw a little more light on the subject, I have taken some trouble to investigate early reports of this kind from America. The following quotation from Swammerdam, who wrote in about 1669, tells enough to prove that the bees in question could not have been honeybees as we know them, since our honeybees do not store honey in cells resembling bunches of grapes;

"What is called rock honey in some parts of America, is the product of a peculiar kind of bee, lodged in a very singular manner. This bee makes no regular comb, but notwithstanding that, it preserves its honey in waxen vessels; the honey is clear as water and very thin. The bees hang their clusters of cases to a rock; one is first made and is very securely fastened, then others are hung to that, in the manner of grapes in a bunch. These cells or cases are larger than the biggest grapes, and of an oval shape; each has at first an aperture at the upper part, in which the bees put the honey; when it is full they close this aperture; forty of these cases will sometimes hang together, and the honey is excellent and in large quantity."

Here we have a reference to "honey in large quantity" as well as wax, yet the wildest stretch of imagination could hardly credit these clusters of cells larger than the biggest grapes to the honeybee.

Frank C. Pellett.

PREPARE NOW

We are getting orders for hundreds of shallow extracting supers from those that have tried them and are satisfied that they pay. Get yours now, so that you can supply your colonies with this needed room and reap the reward one year earlier than if you put it off.

10 ten-frame shallow extracting supers with frames... \$ 8.00 100 ten-frame shallow extracting supers with frames... 70.00
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1000 white pine shallow extracting frames 32.00

We are saving others money, why not let us quote you?

THE STOVER APIARIES
MAYHEW, MISS.

Crop and Market Report

Compiled by M. G. Dadant

CROP AND MARKET REPORT

From replies coming in since the last Crop and Market Report it would appear that possibly the writer has stressed too much the advisability of obtaining higher and higher prices for honey. This was the reverse of the actual point I wished to impress, although, of course, everyone desires to get as high a price for his honey as possible.

The one thing toward which all beekeepers should strive is the development of a demand for honey and the stabilizing of a price so that one may not find one grocery store selling honey at 65c for a 5-pound pail and across the street another grocery store offering the same quality of honey as high as \$1.25. This same thing happened in a neighboring town here.

We must certainly get to the point where we can get a stability of market for honey or else there will never be a very large market for our product.

The situation remains unchanged as to the sale of honey during the present year. Stocks in the hands of producers are rapidly cleaning up and the demand still remains strong on the part of retail trade.

We see no reason why practically all honey now in the hands of distributors and beekeepers should not be in the hands of consumers before the new crop is gathered.

There is still a strong demand on the part of bakers and confectioners for honey, which now competes favorably with sugar prices. In fact many bakers are learning the substitute or had learned it during the war, and are slow to change back to sugar owing to the desirable properties of honey as a sweetening.

Reports of different members of our staff, who have visited state and county meetings during the past month, lead us to believe that the situation as regards stores is even worse than suggested a month or so ago. Many bees went into the fall very short of stores and the fall has been warm throughout the central country, so that bees have used larger quantities of honey for fall feed than usual. The result is that, unknown to the beekeeper, many colonies are going into winter quarters very short of stores. This is to be regretted, because it will likely mean a considerable loss of colonies during the year.

We would urge all beekeepers, where situated so that they can, to take one last look at their colonies before they become quiet for winter, to make sure that they have sufficient stores, at least to carry them through until the first warm days of spring.

Conditions as to honey plants, on the contrary, have improved over one month or even two months ago, because practically all over the country there have been copious rains during the past few weeks and the honey plants have gone into winter quarters in excellent condition. This is especially true in Texas, where it seems plants are in better condition than they have been for several years. A prominent authority from there suggests that he does not see how Texas could possibly miss

some kind of a crop in 1924. The honey producing plants and shrubs have made a fine growth during 1923, but have had little bloom. The bloom should be profuse another year.

GOVERNMENT REPORT FOR DECEMBER

The average yield of surplus honey in the United States this year is only 39.1 pounds per colony, according to reports received by the United States Department of Agriculture from its special honey and honeybee correspondents. In 1922 the average yield per colony was 53.8 pounds and during the period 1913-1921 the average was 46.4 pounds per colony. The reports of the correspondents also indicate that only 27.9 per cent of the honey taken off the hives will be shipped out of the communities in which it was produced. Ordinarily about 32 per cent of the crop is sold to outside markets.

A few important states, including New York, Pennsylvania, Michigan, Wisconsin, Tennessee and North Carolina, have an average yield per colony or better, but in most states the surplus honey yield per colony is somewhat less than the average. Comparatively little surplus was produced this year in many parts of the Ohio Valley and the Lower Missouri Valley, and but little in most of the Cotton Belt. Unusually low yields were the rule in Texas and in Southern California, the flow from sage and other desert plants in the latter state being nearly a complete failure. The honey crop from orange bloom in California was also very short.

The slow recuperation of many colonies from the weakness due to the severe winter of 1922-23 prevented their taking full advantage of the flow, even when present.

There seems to be a tendency to leave more winter stores on the hives than usual and bees are generally going into winter quarters in fair condition, although conditions are somewhat below usual in the Southeast and in Southern California. In the Cotton Belt considerable loss of bees has been experienced from the poisoning of cotton to combat the boll weevil.

Prices, as reported by this list of correspondents for sales in small packages, vary considerably. The average reported price of white comb honey ranges from less than 20 cents per pound in New Mexico and Texas to nearly 40 cents in New England, the average for the United States being 25.9 cents. Average prices for white extracted range from 11 or 12 cents in Utah and Idaho to 32 cents in New England, the average for the United States being 19.2 cents. The United States average price, as reported in November, 1922, was 21.0 cents per pound for white comb honey and 14.3 cents per pound for white extracted.

About 60 per cent of this year's is extracted, compared with an average of 51 per cent; while only 30 per cent is comb, compared with an average of 35 per cent. The percentage of chunk or bulk honey is nearly 10 per cent, which is 4 per cent less than the 5-year average.

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

BEES AND QUEENS

NEW HONEY IN JANUARY—Atwater.

MERRILL'S QUEENS—\$1.00 each.
R. E. Merrill, Muney, Pa.

SEE our display advertisement on page 9.
Loveitt Honey Co.

HARDY ITALIAN QUEENS, \$1 each.
W. G. Lauver, Middletown, Pa.

BEES AND QUEENS at reduced prices. Cypress hives for sale. Write for terms.
Otto Diestel, Eliza, Ga.

QUEENS for the balance of the season of 1923. Write and get our prices.

O. P. Hendrix & Son, West Point, Miss.

SELECT UNTESTED three-banded leather colored Italian queens by return mail at \$2. Orders booked 15 days ahead, \$1.50. Send for prices on large orders. These bees hold Indiana record for comb-honey average per colony in a run of ten years.
Charles Kennard, Knightstown, Ind.

PACKAGE BEES, Nuclei and Queens for 1924. Send for circular.
Allen Latham, Norwichtown, Conn.

BEES BY THE POUND; also Queens—Booking orders now. Free circular gives prices, etc. See larger ad elsewhere. Ault Bee Co. (Successors to Nueces County Apriaries); San Antonio, Tex. E. B. Ault, Prop.

SEE my display ad., page 9.
Jes Dalton, Bordelonville, La.

GOLDEN ITALIAN QUEENS—Producing bees solid yellow to tip from record honey gathering breeders. Package bees and nuclei. Circular 1924 ready.
Dr. White Bee Company, Sandia, Tex.

BOOKING ORDERS for 1924; 2-lb package 3-band Italian bees with select queen, \$4.25. Guarantee satisfaction; no disease.
J. Allen, Catherine, Ala.

FOR SALE—100 stands of bees, with full equipment; also 15 acres land. Price reasonable.
G. V. Sumner, McMurray, Washington.

PACKAGE BEES, nuclei and queens, 1924. Write for descriptive price list.
J. J. Scott, Crowley, La.

PINARD'S quality queens and package bees. Now booking orders for 1924. Circular free. Yours for better bees.
A. J. Pinard, Morgan Hill, Calif.

GOLDEN and three-band queens reared in separate yards; booking orders for 1924. Untested, one, \$1.25; doz., \$11.50. Safe arrival guaranteed in U. S. and Canada.
Tillery Bros., R. 5, Greenville, Ala.

I AM booking orders for spring delivery. 3-frame nuclei and queens at reduced price. Caucasian or Italian race. No disease.
Peter Schaffhauser, Havelock, North Carolina.

PACKAGE BEES AND QUEENS—Delivered. Bright Italian. Two-pound packages with selected untested queen, 1 to 5, \$4.75; 5 to 25, \$4.60; 25 to 50, \$4.40; 50 or more, \$4.25. Selected untested queens, 1, \$1; 12, \$10. Safe arrival and satisfaction guaranteed; no disease; ship nothing but the best; 20 per cent cash books order. Begin shipping April the 15th.
W. C. Smith & Co., Calhoun, Ala.

100 HONEY GIRL breeding queens free—

Honey Girl strain world famed for most prolific queens, and record honey producers. Our \$1000.00 St. Romain's Honey Girl will head our breeding stock. We guarantee highest quality at lowest prices. Golden and Golden 3-band. A card will bring our catalogue and prices on queens and packages and full particulars regarding our offer of breeding queens. We wish to place a high quality breeding queen with every beekeeper who is interested in our Honey Girl strain.

Cottonport Honey Girl Apriaries,
Cottonport, La.

Address to Hamburg, La., until April 1.

FRIEND BEEKEEPER—We are offering for 1924 the same high-grade Italian queens we have furnished in the past, with an absolute guarantee for satisfaction. These queens are large, bright, gentle and prolific, easy to handle. Prices as follows: 1 to 30, 75¢; 30 to 100, 70¢; discount on large contracts. Tested queens, \$1.50; 3-frame nuclei with young queen, \$5.00; package bees, \$2.00 per pound. Place your order now and be sure. We take great interest in our work, which insures good service, although we are not infallible; therefore we stand ready to make any and all mistakes good upon request. Yours for queen service.

Walker & Shaner, Scotts Station, Ala.

PACKAGE BEES, nuclei and queens. Pure bright three-band Italian, April and May delivery. Absolutely no disease. Get my prices and circular before ordering. Guarantee safe arrival.

J. L. Morgan, Apalachicola, Fla.

THREE-BAND Italian queens for 1924. Tested, in May and June, \$2 each. After June, \$1.50 each. Untested, in June, 1, \$1.25; 6, \$6.50; 12, \$12. Untested, after June, 1, \$1; 6, \$5; 12, \$9. Write for prices on lots of 100 or more. Capacity, 1,000 queens per month, and each queen guaranteed in every way; 10 per cent books orders for future delivery.

J. F. Diemer, Liberty, Mo.

CARNIOLAN QUEENS—I will breed from imported mothers of pure Alpine stock. Their support will consist of Lockhart's best strain of specially selected breeding stock. No better combination could be arranged. Price will be right. My circular treats of Carniolan bees—rearing their queens—introducing the queens—and other matter that might interest you.

M. G. Ward, Lathrop, Calif.

PACKAGE BEES & QUEENS—Italians or Carniolans. I can save you express charges. See larger advertisement for prices.

J. E. Wing, San Jose, Calif.

PACKAGE BEES and THREE BAND ITALIAN QUEENS—That please and give results. Selective breeding does tell. We have been rearing them here for the past nineteen years. No brood diseases in this section. Write for prices.

Allenville Apriaries, Allenville, Ala.

BEES—Three-pound packages, three-frame nuclei and three-frame nuclei with two and one-half pounds extra bees. April and May delivery. None better. Address during January, David Running, Fillion, Mich.; after January, Running Apriaries, Sumterville, Ala.

FINEST ITALIAN QUEENS—Booking orders. Wm. R. Stephens, Wingate, Ind.

PACKAGE BEES—From healthy stock; prices right. Circular on same.

M. G. Ward, Lathrop, Calif.

EARLY QUEENS—My 1923 tested queen now ready at \$1.00 each. Untested queens after April 1, 1924, \$1.00 each; \$90 per hundred. Two-pound packages priced on request. Pure three-band Italians only. Grown by the very best methods.

D. W. Howell, Shellman, Ga.

BOOKING orders now for queens and package bees. Write for prices. I am the breeder who always satisfies his customers.

Jasper Knight, Hayneville, Ala.

GOLDEN ITALIAN QUEENS for 1924. The big, bright, hustling kind. Satisfied customers all over the U. S. Untested \$1.00 each, \$6 for \$5.00, 12 for \$10, 100 for \$75.00; tested, \$1.75. A few two-frame nucleus at \$4.50, with queen.

E. F. Day, Honoraville, Ala.

EARLY BEES AND QUEENS—Untested queens, \$1.00 each; \$11.00 doz. Select untested, \$1.20; tested, \$1.50; breeders, \$5.00 each. Nuclei, 2-frame with queens, \$4.25 each; 12 or more, \$4.00 each; 3-frame, \$5.25 each; 12 or more, \$5.00 each. Two and three-pound packages same price, respectively, as above, queens included. Pure three-band Italians only. Health certificate with each shipment. Safe arrival and satisfaction guaranteed; 10 per cent books your order, balance just prior to shipment. Reference: Artesia State Bank, Artesia, Miss., Bank of Crawford, Crawford, Miss. Jensen's Apriaries, Crawford, Miss.

TRY our Golden Queens. They are gaining popularity each year. Satisfaction and safe arrival guaranteed. Price \$1.25 each, \$11.00 per dozen.

Honoraville Bee Co., Honoraville, Ala.

HONEY AND BEESWAX

SEE our display advertisement on page 9.
Loveitt Honey Co.

FOR SALE—White and amber extracted honey. Write for prices. State quantity wanted.

Dadant & Sons, Hamilton, Illinois.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request.

Dadant & Sons, Hamilton, Ill.

FOR SALE—White honey in 60-lb. cans; also West Indian in 50-gal. barrels. Samples and prices on request.

A. I. Root Co., 38 Leonard St., New York City, N. Y.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire.

Dadant & Sons, Hamilton, Ill.

1923 CROP clover honey in 60-lb. cans, also 5 and 10-lb. pails. Prices upon request. Sample 10c.

Sioux Honey Association, Box M. 26, Sioux City, Iowa.

HONEY FOR SALE—In 60-lb. tins; white clover, 18c, for immediate shipment from New York

Hoffman & Hauck, Woodhaven, N. Y.

FOR SALE—Comb honey at lower prices. Write H. G. Quirin, Bellevue, Ohio.

CHOICE extra fancy white clover honey in new 60-lb. cans; 120 lbs. net, \$14.40. Sample 20c.

Edward A. Winkler, Joliet, Illinois, R. No. 1.

FOR SALE—Choice white clover and milkweed honey in 60-lb. cans. Sample and prices on request.

Ralph Lenosky, East Jordan, Michigan, R. No. 5.

FOR SALE—Comb and extracted white clover honey. Extracted in 60-lb. cans, 5 and 10-lb. pails. Prices given on request. Sample 15c.

F. W. Summerfield, Waterville, Ohio.

FOR SALE—80 cases fancy No. 1 white clover comb honey, \$6.00 per case; 24 sections per case, 8 cases per carrier.

Edward A. Winkler, Rt. 1, Joliet, Illinois.

FOR SALE—20 cases sweet clover honey, light color, well ripened on hive, only best taken; new 60-lb. cans, \$14.40 per case.

J. Frank Haan, Des Plaines, Ill.

SUPPLY your trade with my extra white alfalfa-sweet clover honey in 5 and 10-lb. pails. A case or a carload. Sample 15c.

Clyde V. Fisher, 1502 Cass St., Omaha, Neb.

FOR SALE—20,000 lbs. white clover honey; 2 60-lb. cans, \$14.40; 6 10-lb. pails, \$7.80; 6 5-lb. pails, \$4.50.

J. M. Gingerich, Kalona, Iowa.

FOR SALE—Choice light extracted honey. C. F. Sager, Chillicothe, Ill.

FOR SALE—Extra choice white clover honey, new 60-lb. cans. Case or carload. Also choice light amber. Sample 15c.

David Running, Fillion, Mich.

FOR SALE—3,000 lbs. honey in 60-lb. cans. Mostly clover, 11c per pound. Lee Waller, Durand, Ill.

HONEY FOR SALE—In 60-lb. cans; clover-basswood. State quantity wanted. Sample 15c. Edw. Hassinger, Jr., Greenville, Wis.

FANCY clover-basswood honey in 10-lb. and 60-lb. tins; 10,000 lbs. Sample 15c. Oakdale Apiaries, Rock Creek, Minn.

WHITE EXTRACTED HONEY—White clover, basswood and sweet clover. Very fine color and body; it will please your customers; 60-lb. cans and 5-lb. pails. Sample 15c. W. A. Jenkins, 20 Bluff St., Hamburg, Iowa.

SUPPLIES

NEW HONEY IN JANUARY—Atwater.

SPECIAL PRICES—We are offering at specially low prices some very high grade material in shipping cases, frames, hives and miscellaneous which represent items we no longer carry regularly in stock or which have to be closed out to make room for new stock specially equipped to take Dadant's Wired Foundation. If interested, write for list; we can save you money. Dadant & Sons, Hamilton, Ill.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list. American Bee Journal, Hamilton, Ill.

CONNECTICUT and Rhode Island headquarters for Root's Beekeepers' supplies. A. W. Yates, 3 Chapman St., Hartford, Conn.

ATTRACTIVE LOW PRICES—Write us for list of odds and ends, shipping cases, hives, etc., first grade, priced to save you money. Dadant & Sons, Hamilton, Ill.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list. The Colorado Honey Producers' Association, Denver, Colo.

I CAN save you money on bee supplies. Write for prices. E. G. Lewis, Beeville, Texas.

FOR SALE—Two 150-gal. tanks and Lobe pump. Clyde V. Fisher, 1502 Cass St., Omaha, Neb.

FOR SALE—150 deep ten-frame extracting supers with full set of wired combs; like new. Chester E. Keister, Orangeville, Ill.

IDAHO White Pine Bee Supplies. Select material. Excellent workmanship. Prices low. Satisfaction guaranteed. Write for sample and prices. John E. Thomson, Coeur d'Alene, Idaho.

FOR SALE OR EXCHANGE FOR PACKAGE BEES—Neat home-made 10-frame extracting supers, nailed and painted white. Lots 50 to 100, \$40 per hundred, with unspaced frames, \$77 per hundred. Henry Eggers, Birchwood, Wis.

FOR SALE OR TRADE, at a bargain—Second-hand eight-frame hives. D. E. Lhommedieu, Colo., Iowa.

FOR SALE—Used hives, clean, telescope covers. P. S. Crichton, 47 Alma Ave., Waverley, Mass.

FOR SALE

SEE our display advertisement on page 9. Loveitt Honey Co.

FOR SALE—Good second-hand 60-lb cans, 2 cans to a case, boxed, at 60c per case, f. o. b. Cincinnati. Terms cash. C. H. W. Weber & Co., 2163 Central Ave., Cincinnati, Ohio.

FOR SALE—Carload of bees, also nuclei and pound packages of hustling 8-band Italians. 3-pound package with queen, \$5.00; 2-pound package with queen, \$3.75; 3-frame nuclei with queen, \$5.00; 2-frame nuclei with queen, \$3.75. Untested queen, 1, \$1.00; 12, \$11.00. Orders booked free. W. E. Buckner, Mt. Vernon, Ga.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Ill.

FOR SALE—Soiled cane sugar for feeding bees. Get your supply now for spring feeding. Winkler Honey Co., Joliet, Illinois, R. No. 1.

I WILL SELL my outfit of about 850 colonies of bees, heavy with stores, good equipment, good queen-rearing outfit, and much other appliances in good condition. This business is a paying business, and I will teach the purchaser the science of the business, and I am competent to do that. Further details given on request. Box W, care American Bee Journal.

FOR SALE OR LEASE—Oldest and best located roadside sales, honey ranch in the state; 300 colonies of bees well equipped for extracted honey. Free from foulbrood. On best traveled highway in the west. Full description sent on request. D. M. Storey, Fountain, Colo.

FOR SALE—Hubam annual sweet clover seed. One of the greatest producers of fine honey. Noah Bordner, Holgate, Ohio.

FOR SALE—Near Nashville, Tenn., about 20 colonies of bees in fairly good shape, also abundant equipment for handling same. A bargain. 150 cases used 60-lb. cans, good shape, 50c per case. At Allensville, Ky., 175 brood chambers with drawn brood combs, \$8.00 per body—35 bodies with drawn combs, suitable for extracting only, \$2.00 per body—20 shallow supers with drawn combs, \$1.00 per super—60 empty shallow supers 30c each—25 empty deep supers, L. depth, 70c each—100 wood wire excluders 50c each—85 metal covers with super covers, 90c each—45 good bottoms, 50c each—25 extra good bottoms, 50c each—14 bodies with empty frames, \$1.00 each. All the above standard 10-frame Root goods and in splendid shape unless otherwise stated. Am changing to different hive. No disease. Porter C. Ward, Elkton, Ky.

FULL COLONIES 8-frame Langstroth, complete with bottoms and covers, average 5 frames brood, all good combs. Second-hand equipment, but nothing rotten. Small lots, \$8.00 each; the lot, 150, \$7.00 each. Shipment about May 1st. Italian, no disease, F. O. B. here. Jensen's Apiaries, Crawford, Miss.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. The Apis Club, Benson, Oxon, England. Send us a postcard today. It is well worth your little trouble.

PLANS FOR POULTRY HOUSES—All styles; 150 illustrations; secret of getting winter eggs and copy of "The Full Egg Basket." Send 25 cents. Inland Poultry Journal, Dept. 56, Indianapolis, Ind.

PRINTING—Appeldoorn saves you money on quality printing. C. J. Appeldoorn, Malinta, Ohio.

EXPERIENCE AND FAIR WAGES to active, industrious young man for help in well-equipped apiaries. Seven hundred colonies. April to December. State age, height, weight, occupation, wages. Morley Pettit, Georgetown, Ontario, Canada.

THE "Archiv fur Bienenkunde" is a valuable scientific publication. "It merits the appreciation of all beekeepers acquainted with the German language," says the Bee World (January, 1923). "The Archiv fur Bienenkunde, now in its fifth volume, is of as high grade as any bee journal which comes from abroad, dealing especially with the scientific aspects of beekeeping," says Gleanings in Bee Culture (February, 1923). Annual subscription, \$1. Specimen copy free. Publisher, Theodor Fisher, Freiburg im Breisgau, Kirchstrasse 31, Germany.

SEND TODAY for samples of latest Honey Labels. Liberty Publishing Company, Station D, Box 4005, Cleveland, Ohio.

HUBAM Clover Seed. Wisconsin grown. Write for prices. A. C. Baumgarten, R. 2, Box 27, Thiensville, Wis.

LONESOME?—Then get "a date with your honey" and enjoy the evening. Meet the rest of the family of Hon-E-Nut Chocolates. You'll like them all. \$1.00 per pound postpaid. Chocolate beehives full of honey and nuts, two for 25c or \$1.10 per dozen, postpaid. Fairmount Apiaries, Schuylkill Haven, Pa.

FOR TRADE—160 acres in Aitkin County, by McGregor, Minnesota. Will exchange for bees. George Wicks, Elmore, Minn.

YORK'S BEES AND HONEY, monthly, edited by George W. York, Spokane, Wash. Sample free, on request.

WANTED

NEW HONEY IN JANUARY—Atwater.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5¢ a pound for wax rendering. Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.

WANTED—Man for extracted honey. State age, experience and wages wanted. B. F. Smith, Jr., Fromberg, Mont.

WANTED—Comb honey. Jamison, 690 Adams, Memphis, Tenn.

WANTED—Situation for coming season by young bachelor of good habits and character who has the ability to handle bees, having had experience with beekeeping and queen rearing. Would appreciate offers from the west or south. Would prefer Florida as a matter of economy; offers solicited. Joe Gates, Lithia, Fla.

WANTED—Car or less lots of clover honey; mail sample and quote lowest cash price. A. W. Smith, Birmingham, Mich.

WANTED—Comb honey supers, ten-frame size, free from disease, taking 4 1/4 x 4 1/4 x 1 1/2 sections. Chester E. Keister, Orangeville, Ill.

WANTED—Good one-frame observation hive. C. F. Sager, Chillicothe, Ill.

WANTED—Extractor, pump, melter, tanks, and bees in large lots. L. M. Gulden, Englevale, N. D.

WANTED—Extracted honey. State lowest price. R. E. Merrill, Muncy, Pa.

WANTED—To exchange bees for Barnes saw and typewriter in good condition. W. E. Buckner, Mt. Vernon, Ga.

WANTED—Young man with four years experience in commercial honey production wishes position in Michigan, Wisconsin or Minnesota. J. K. Dixon, Adams Center, N. Y.

RETURNED today (10-20-23) from second voyage to Philippines and want three or four beemen who have the qualities of dependable pioneers and considerable cash to join me in introducing the bee industry into the Philippine Islands. Go into detail first letter; so will I. Leo F. Hannegan, Care Y. M. C. A., Tucson, Ariz.

WANTED—Experienced man for extracted honey from May 1st until October. State experience and price in first letter. Oscar Skow, Dunlap, Iowa.

WANTED—Hubam sweet clover seed. Send small sample, state quantity and lowest price all in first letter. Dadant & Sons, Hamilton, Ill.

WANTED—Old bee books. Prof. Francis Jager, University Farm, St. Paul, Minn.

WANT bees and equipment, within reasonable shipping distance, for good equity in Western Minnesota forty or Red River Valley quarter. A. M. Wise, Appleton, Minn.

SOME ANCIENT HISTORY IN A PRIVATE LETTER

Charles Dadant to Edouard Bertrand

October 26, 1884.

Dear Mr. Bertrand:

Your letter is welcome, for I woke up this morning with a feeling of despondency, when I saw the rain, which fell all night, still continuing, with its November setting of winter thoughts.

I must say also that I am alone with our ladies, and the children, who make a dreadful noise. Camille (C. P. D.), when he came home from extracting honey in the bottoms apiaries, expressed the desire of taking a duck hunt down there, at the first cold spell. He mentioned this project to several of our men, who were all desirous of accompanying him.

John, our colored man, when he ran away from his owner's home, in Georgia, followed the northern army of Sherman, during many months, as a cook. So John made the preparations for this trip and looked after the supplies. A coffee-pot, some skillets, a frying pan; also blankets, pillows, tarpaulins, a tent; for they wanted to camp like an army on the march and shoot ducks mornings and evenings, when they fly from the River to the fields or from the fields to the River.

John has a great deal of foresight and I can guarantee that he forgot nothing that might be useful. The idea of camping out in the damp field did not suit Camille very well, but he knows that Lamet, the owner of the location of one of our apiaries, has a farm in the lowlands with an old house and a stove; so with a little straw on the floor, they may spend even wet weather without any hardships. They were to come home yesterday, if they found no game, but they did not come back.

When they went away, I advised them to take some cash along, to buy ducks, and to be sure and contrive some good stories on their skill in shooting those ducks. I also advised them not to forget to have a good supply of gunpowder, so as not to be caught like my grandfather; also to make sure that the ducks are fresh killed when they buy them, for I remember of my father-in-law bringing home as his kill a hare which was beginning to spoil.

My grandfather was a great hunter, and he used to invite his friends, on St. Hubert's day, to partake of his game at a banquet.

Once, as he came home with an empty bag, and yet expected his friends to be at his house the next day, for a feast of his game, he met a poacher who agreed to let him have a fine hare in exchange for some contraband gunpowder which he was in the habit of purchasing, and of which he promised him a package if he would come after it at his home.

The next day, at the feast, he had just told his guests in what manner he had found the hare which they were eating and had shot it, when the housemaid came in and stated that a man was at the door who desired to speak to him. "Let him come in," said my grandfather. It was the poacher, who came for the gunpowder which he had promised him in exchange for the hare, and in spite of unequivocal attempts to hush his talk, made it plain that the game they were eating was purchased, and not hunted down by grandfather.

We are still wondering what our hunters are doing this rainy day. Perhaps they have gone to some friend's home at one of our apiaries. In addition to these, there is also an old settler, a man by the name of Daugherty, who calls himself an "Illinois sucker," for whom our crew does the extracting each fall, and who would be sure to welcome them.

Daugherty is a wealthy farmer, who keeps some sixty hives. He had box hives till he tried our methods, and now he wants only large, movable frame hives and extracting supers. Camille took care of his bees at one time for a share. Now we only extract his honey every year.

I want to say to you here that the crop is small this year. We had only 1,500 pounds of honey in the bottoms. But the hives are well stocked with stores; these stores are not of very good quality and I am afraid we will have losses if the winter is bad.

Honey is selling readily. We had about twenty barrels left from last year, for which we refused 8 cents. We now expect to get at least 10 cents for it. There is between 10,000 and 11,000 pounds of it. It is of better quality than that of this season.

You tell me that you smoke too much. I believe I had best write to A. I. Root to offer one of his bee-smokers to you on condition that you will quit. (At that time Mr. Root was making the offer of a bee-smoker to any beekeeper who was an inveterate smoker and would agree to quit.) I smoked, too, when I was a young man. It was a pretty girl who cured me of the habit. I was stealing a kiss from her, when she said with a frown: "Fie, you smell pipe." It had displeased her and displeased me also. As I prized a kiss more than a pipe, I quit, and since that time I smoke only on rare occasions. You should do the same; I am sure it would give you better health. I advise Mrs. B. to refuse to be kissed by you, until you reform.

You complain of nasal catarrh. They now sell in this country some small thimbles with holes at both ends and containing within the tube a preparation of menthol. They call these "inhalers". They are very good for catarrh and headaches. Are

BERRY'S QUEENS AND PACKAGE BEES

Bring repeat orders because they insure honey crops and satisfaction to the buyer.

Booking orders now for Queens and Packages for 1924 delivery.

Write for descriptive price list.

M. C. BERRY & CO., Montgomery, Alabama Box 697

HIGH GRADE PACKAGES

Three-frame nuclei, each with queen, 1 to 20, \$5.25 each; 25 to 50, \$5 each; 100, \$4.75 each, cash with order. Add \$1 per package if you wish one pound bees extra in each nucleus; pure Italian queens. I ship throughout United States and Canada annually. Bees healthy; shipments begin April 15; order early. Safe arrival or replacement guaranteed. For especially strong nuclei, order my special package, \$6.25 each.

Also 200 colonies in different locality than this, in Southern Louisiana.

Terms Cash with Order. Order Early.

C. M. ELFER, ST. ROSE, LOUISIANA

you acquainted with them? Perhaps this would help you. I can send you a tube for trial if you wish.

October 28.

Our hunters have come home; they brought eighteen ducks, two rabbits, a teal, some quails, plovers, and a few other birds. They were unable to get near the river, owing to high water. Lamet had joined them and shown them the best fords in the sloughs. As he is a cheerful companion, they enjoyed their trip, although they had to travel across several sloughs with water enough to get into the wagon bed and wet their blankets. They camped next to a haystack which had been partly in the water, but out of which they secured enough good hay to lie on and to feed their team. Their only trouble had been from the mosquitoes and from getting their feet wet whenever they left the camp for game. Camille is well pleased with the trip, but they will not go back, as the weather has warmed up again. But if it gets colder, ducks would be plentiful, for there is water in many a cornfield, which would make good feeding grounds for ducks.

Coming back to beekeeping, I must tell you that I have full faith in large hives, in all circumstances. Kunz had a fine crop, and I do not deny that fine crops may be had with small hives, but when you place the large and the small side by side, as I have done, you appreciate the greater advantage of the large hives.

I write for several bee associations in France, as you know. Some of them do not like my ideas. One or two men have seen fit to become angry because I speak out and do not hesitate to tell the truth. Why should I care? I am not writing to please anyone, but to help progress.

They have written that foulbrood is due to movable frame hives. I replied by proving, from their own writings, that foulbrood was known in thirty departments of France be-

fore they ever tried movable frames. They have never tried a honey extractor and they imagine that it is as cumbersome as a threshing machine and perhaps that it weighs a half ton or more.

I see by the Rauschenfels article in the last Apicoltore (the Italian bee magazine) that he thinks we are living in a country of virgin forests, just as it was when Columbus discovered America. He is not alone in this idea, for, a few years ago, the crown prince of Russia made a trip to America with the idea of hunting buffalos. He was very much astonished when he was told that he would have to travel about 1800 miles to find any and that they were very scarce. He probably thought he could find some a few miles from New York City.

October 29.

I was about to mail my letter when I received your second one.

I do not have as much activity and as much strength as you believe. I am getting lazy, and the least effort checks me. It is understood that Camille and I will publish a second pamphlet on "Extracted Honey" and on our methods in beekeeping; this will show hives and methods quite different from those now supported by the leaders, Root, Doolittle, Heddon, Hutchinson. For many people they will be new ideas. But we have not yet taken any steps towards this. Our "Extracted Honey" publication is entirely exhausted.

The screened box used by us to melt combs is only a piece of wire netting, made into the shape of a small box, and dipped into the kettle of melting combs. The melted wax that runs into it is dipped out with a ladle, but this needs to be melted over afterwards to purify it.

At the same time with your letter, I received L'Apicoltore for October, in which Rauschenfels calls me "Nostradamus." Am I, then, a prophet?

Chas. Dadant.

BETTER MEDICINE THAN PILLS OR POWDERS

Our honey dealer does not confine his advertising stunts entirely to the grocery lines, but takes a swat at the drug business. A huge sign appeared in the druggist's window like this: "Watch this window all next week and see the best medicine in the world made right before your eyes." The window stood empty with the exception of this sign for about two days and everyone watched expectedly.

The third day, we noticed a screen wire cage had been placed within. The next day, a mass of blooming plants had been placed within the cage. Each day something was added until on Wednesday evening the hive of bees made their appearance. Just outside the cage the cakes of honey were piled high bearing the price tag. At one side of the cage stood a picture of his bee farm and his name and address and an invitation to the public to visit his home.

He allowed the druggist a commission on every cake of honey sold in this manner and the druggist told me that it had been a good trade puller for him, as his other window came in for more than their share of attention during that time. The following few weeks hundreds of motorists took advantage of his kind invitation and visited his farm, and few went away without first making a purchase.

Mrs. Luella B. Lyons.

Big Hives

In October Journal, page 515, Hermeling gives me away. I will admit that I have 150 stands of bees and six of them on frames 15 inches deep for the past 15 years. They do give large yields of honey, with no swarming, yet beginners have failed with them.

If I can keep out of the doctor's hands I shall try some more experiments.

J. W. Ware, Washington.



For years we have been shipping thousands of pounds of bees all over the U. S. and Canada

Order Direct from this Ad.

We are prepared to take care of your rush orders



2-pound package bees, \$3.75 each, 25 or more, \$3.60 each.
2-frame nuclei same price as 2-pound packages.
3-pound package bees, \$5.25 each; 25 or more \$5.00 each.
3-frame nuclei same price as 3-pound packages.

Untested queens, \$1.00 each, 25 or more 85c each, \$70.00 per hundred.
This is a special SALE on untested queens of high quality.

Select untested, \$1.70, 25 or more \$1.50 each. Tested \$2.25 each, 25 or more \$2.00 each.
Select tested \$2.65 each, 25 or more \$2.25 each. Breeders \$5.00 to \$15.00.

ITALIAN

CARNIOLANS

GOLDENS

AULT BEE COMPANY, San Antonio, Texas
SUCCESSORS TO NUECES COUNTY APIARIES

Ohio Beekeepers' Association

The Ohio Beekeepers' Association will hold its annual meeting at the Ohio State University, February 7 and 8, Thursday and Friday of Farmers' Week. The program will be wholly educational, practical, well-rounded and fitted to local needs; dealing with marketing as inseparably a part of production, and the value of organization in working out the problems of the beekeeper. Among the speakers at this meeting will be Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C.; Professor H. F. Wilson, University of Wisconsin; Professor Sherman W. Bilsing, Texas College of Agriculture; Mr. E. R. Root, President of the A. I. Root Company; Dr. J. C. Hutzelman, who developed the Hutzelman Solution for sterilizing combs containing foulbrood; Mr. Charles A. Reese, State Apriarist, and other local beekeepers. Mr. George S. Demuth, editor of Gleanings in Bee Culture, has also been invited, and we do not think he will miss a meeting in his home state. Everyone interested in beekeeping is cordially invited to attend.

Florence Naile,
Secretary.

Short Course Programs

The agricultural colleges of Iowa, Minnesota and Illinois will offer short courses in beekeeping. Prof. Wallace Park, of Illinois University, at Urbana, announces the first beekeeping course to be offered at that institution, which will be held on January 23 to 25. A good attend-

ance is hoped for and a strong program is in course of preparation.

Prof. Paddock, of Ames, Iowa, has announced the dates of January 29 to February 1 for the course at Ames. The program has not yet reached us but will be sent on application to Prof. Paddock.

Prof. Francis Jager, of University Farm, Minnesota has selected January 9 to 11 for the Minnesota short course. Programs should be secured from Prof. Jager.

Mr. G. H. Cale, of the staff of the American Bee Journal, expects to attend the Iowa and Illinois courses and Frank C. Pellett plans to be at the Minnesota course.

League Attacks New Problems

All state beekeepers' associations are urged to send delegates to the convention of the American Honey Producers' League to be held at the Great Northern Hotel, Chicago, on January 24, 25. A number of new lines of work will be discussed which are expected to have an important result in aiding honey marketing and in helping solve various beekeeping problems.

Among the subjects which will be discussed will be the new honey grades for the United States, which have been fixed by the U. S. Department of Agriculture and will be ready for public discussion at that time. Several specialists are also on for methods of local advertising which will result in the greatest possible publicity at a minimum cost. The use of colored signs and posters, attractive stationery, lithographed pails, advertising specialties, short

newspaper articles and radio talks will be considered.

A plan is also being worked out which will enable the League, with the support of a bonding company, to uphold a new queen breeders' guarantee to aid the purchasers of queens and package bees in separating the responsible from the dishonest and careless breeders. There is a strong demand for a project of this kind and it is expected that a representative of one of the bonding companies will join the discussion.

Beekeepers who expect to attend are urged to send in their reservations to the Great Northern Hotel at the earliest possible date.

A Live British Columbia Association

Mrs. F. A. Greenwood, Deep Cove, Sidney, B. C., has just advised us of the selection of new officers of the Vancouver Island Beekeepers' Association, of which she is Secretary.

The President of the Association is W. O. B. Ormond, of Victoria, the Vice President being Mr. Dean, Keating, B. C.

The Association is a very live one and holds meetings the first Wednesday in every month.

Kansas Meetings

We have just been advised that the Kansas State Beekeepers' Association will meet at Topeka on February 5 and adjourn to meet with the apiary department of the Kansas Agricultural College at Manhattan, on the 6th and 7th. This arrangement makes it possible for the beekeepers to attend the convention and the short course in the same trip and with little extra expense.

\$5.00**REWARD****\$5.00**

To be Paid in Bees for First Correct Answers to These Questions. We Confess Ignorance.

Having bought queens from various persons and received brighter ones advertised "leather-colored" from some breeders than three bands from others, also received three bands that had more yellow than goldens. Questions: Where does "leather-colored" end and three band begin? Where does three band end and goldens begin? Also, where does the extra pound commence in nuclei? Buy nuclei from us and extra pound nuclei from the other man and you will find the answer to the last question.

Our bees will not answer to a pet name, but just kick the cover off.

J. G. PUETT & SONS, Moultrie, Ga.



ITALIAN QUEENS

FOR 1924 OUR OLD RELIABLE THREE-BANDED ITALIAN QUEENS will be shipped from one of the largest and best equipped queen-rearing yards in the SOUTH.

We have bought the queen-rearing department of one of the largest beekeepers of the state and have added it to ours, which will enable us to put out double the amount of queens as heretofore.

We are now booking orders for spring delivery, one-fourth cash. Safe arrival guaranteed in U. S. and Canada. Circular free.

Untested, \$1.25; 6, \$6.50; 12, \$12. Tested, \$2.50; 6, \$14. Select Untested, \$1.50; 6, \$8; 12, \$15. Select tested, \$3 each

If you once try our queens, you will always use them.

JOHN C. MILLER, 723 C STREET, CORPUS CHRISTI, TEXAS



The Jumbo—the Cheapest and Best Big Hive

Cheapest—

Jumbo Frames cost only $\frac{1}{2}$ c more than the Standard Hoffman Frame.

Jumbo Bodies but 15c more than the Standard 10-frame Body.

And a set of 5 K. D. Jumbo Hives with M. C. complete but \$1.25 more than 5 Standard M. C. 10-frame hives.

Best—

Jumbo meets every requirement for the producer wishing equipment larger than Standard.

Jumbos fit regular 10-frame equipment, are therefore used with greatest efficiency and economy in well organized apiaries.

Plenty of brood and storage space.

WEIGH THESE FACTS CAREFULLY AND USE JUMBOS FOR BEST RESULTS

THE A. I. ROOT CO., COUNCIL BLUFFS, IOWA

HONEY WANTED

We are ready at any time of the year to take in small or large lots of extracted honey. Send us a sample and advise quantity you have and the price wanted.

HOFFMAN & HAUCK, Woodhaven, N. Y.

QUEENS
Three-band Italians

PACKAGE BEES

QUEENS
Silver Gray Carniolans

My northern yards are located near Redding, Calif., the most northern point from which EARLY PACKAGE BEES and QUEENS can be reared in California. 531 miles from Portland, Ore., 716 miles from Seattle, Wash., 872 miles from Vancouver, B. C., 909 miles from Spokane, Wash. I am close to you with not a single hot valley to pass through. Think of the saving in time and express charges, besides a still greater saving in having the bees reach you in perfect condition. I use pure cane sugar syrup for feed in transit and guarantee no disease, also safe arrival. My Northern customers have shown their appreciation of my Northern service, to such an extent the past season, that I am now adding 2,000 additional large standard three-frame queen-mating hives, besides over 1,000 full colonies, exclusively for Package Bees. Eastern and Northern shipments via Ogden, Utah, will be shipped from San Jose, Calif., as before.

ORDER DIRECT FROM THESE PRICES:

1-pound package, \$2.00 each; 10 or more, \$1.75 each.	2-pound package, \$3.50 each; 10 or more, \$3.00 each
3-pound package, \$4.50 each; 10 or more, \$4.00 each	I untested queen, \$1.00; 25 or more, 90c each
1 select untested queen, \$1.25; 25 or more \$1.00 each	1 select tested queen, \$2.50; 25 or more, \$2.00 each

Breeders, extra select and tested for breeding, \$5 to \$10

Add price of queen when ordering packages. Orders booked with 10 per cent deposit, balance before delivery.

Write for prices in large lots. No order too large—No order too small.

References by permission: Security State Bank, San Jose. First National Bank, Chico, Calif. Bank of Cottonwood. Cottonwood, Calif.

J. E. WING, 155 SCHIELE AVE., SAN JOSE, CALIF.

BURR COMBS

Lights and Shadows of the Editorial Department

By Frank C. Pellett.

The big bunch of letters that come to the editors every day contain a wonderful variety of interesting things. While it is impossible for us to write the friendly letters which we would like to all the thousands of our readers, we certainly enjoy hearing from you, and we answer as many personally as we can.

We are very sorry to hear from a subscriber out in California that he has no honey crop this year and that his old clothes must serve awhile longer and that his wife has decided that with a little alteration she can make her hat do another year. We feel a lot of sympathy for him and sincerely hope that he will get a bumper crop and a good price next year to make up for it. It makes our hearts glad, however, when he says that he simply can't do without the American Bee Journal and that its friendly visits each month give him renewed enthusiasm in spite of his poor crop. When a friendly reader from western Texas wrote us that a single number had saved him at least \$1000 and been worth several times the cost of a lifetime subscription we felt repaid for our efforts to give our readers just a little better bee magazine than we had ever been able to do before.

Reading the morning mail is like visiting a strange city—one never knows what is coming next. The letters give us little glimpses of the lives of our readers, and it is from these letters that we must judge the kind of matter which is likely to interest the greatest number and to plan the Journal accordingly. Because the article which one reader values most highly will be passed over by another, we try to get a great variety of material into each issue so there will be something of interest for everybody.

Some of the letters come to my desk and some go to Mr. Dadant, but there are hundreds that are read by other members of the staff. As our circulation grows it becomes more and more impossible for any one person to read all the letters, because there are so many of them.

Compliments and Complaints

Not all the letters are pleasant, for now and then we get a real kick. We are as anxious to get the kicks as the others, too, for when there is something wrong we are very anxious to get a chance to make it right. With the thousands of communications that pass through the office, a mistake is bound to occur now and then and one can't blame a fellow for kicking when this occurs. The kickers are usually our best friends, for they call our attention to errors that should be corrected or show us where we can

change our methods for the better. It gets embarrassing when too many mistakes happen with the same fellow, as sometimes happens.

We get literally hundreds of letters from subscribers saying that the Journal is worth several times its subscription price and that they would not do without it if it cost much more. Now and then, however, we get a letter saying that honey has gone down and that we should reduce the price. Such readers fail to note that when it was taken over by the present management it only contained 32 pages, which sold for \$1 per year. Since then publication costs have more than doubled and the size of the Journal has been increased to 52 pages and it sells at only \$1.50, so that the reader is really getting more for his money than ever before. Those who compare our price to that of other bee magazines overlook the fact that our paper is much larger in size and costs more to publish.

I am telling no secret when I say that the only way the price could be reduced would be by making a smaller and less expensive publication. Those who compare it with a paper like the Country Gentleman forget that such a publication has nearly a million circulation and the cost of articles, pictures and composition is no more for a million circulation than for one thousand. As the circulation of a magazine grows larger the cost per subscriber becomes smaller. At present the profit to the publishers of this Journal would hardly buy a package of chewing gum for each subscriber of the American Bee Journal. I feel sure there are not many readers who would want us to supply the publication for less than a nickel of profit after our expenses have been paid.

Looking Ahead

When the January number reaches our readers most of the February matter will be in type and the March number well planned. It often happens that someone will send us an article on about the 25th of the month, saying that they hope it is in time for the next number. The fact is that the next number is nearly printed and ready for the binder and the number following partly in type. The advertising pages are not ready for the press until two weeks before mailing day, and that is the reason that most of the news notes that come in late are included in the advertising pages, as are some of the short articles.

When an article is accepted it must wait until it can find a place where it will fit in with other things planned

for a special issue. We often find it necessary to hold an article for several months before it can be used. This does not indicate a lack of appreciation on our part for the article, but that it does not fit in with our plans for earlier issues.

Selecting Material

It is sometimes difficult for the editors to decide just which articles can be used and which must be returned. We have just 52 pages in each number and can only use as much matter as will go into that many pages. Sometimes we find it necessary to return articles because they are too long to find a place along with other matter which we think must go in. Sometimes we cannot use them because we feel that as much material has already been accepted as we can spare space for dealing with that special subject. Sometimes good articles are not available because other subjects are likely to please a larger number of readers. If it were not for the friendly letters of our readers telling us about which articles pleased them most or which were most helpful and telling us also what they are doing or hope to do in the apiary, the editors could only guess at what would be most helpful. Sometimes we do a lot of guessing anyway and perhaps we put in articles which are not as interesting as some we leave out.

RIGHT HERE I WANT TO SAY THAT the letters I appreciate most are those from readers who tell me what they like and what they don't like about the Journal. Many of our best articles are written especially because someone has suggested that they would like to see something on the subject. Of late we have been looking everywhere for real live articles on marketing. In the past, efforts have been centered largely on problems of production. It is not the intention to neglect production, but rather to supplement it with the best available information on marketing. The fact is that other products are stealing away the honey market and many people no longer use it, since they can buy cheaper substitutes. This is not due to an over-production of honey, but to the fact that the beekeeper is so busy producing honey that he has neglected to keep the public interested in using it. We think there have been some good articles on honey selling in the American Bee Journal during the past year and we hope to get some better ones for the months ahead.

Again we are proud of the fact that the beekeepers have appreciated our efforts to get out a better publication. When other bee magazines reduced their size we increased ours and our friends have justified our faith by giving us better support than ever received for the smaller magazine at the lower price. Our present Journal is equal to 104 pages the size of most of the other bee magazines.



AMERICAN BEE JOURNAL

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"SIGN" ON EACH
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DON'T GUESS
MAKE SURE,
"HAVE A LOOK"



For all uses that invite decay (for instance, bottoms) demand

"ALL-HEART"

"Tidewater" Cypress

"THE WOOD ETERNAL"

The "arrow" on the end of each board identifies the genuine product of the cypress mills whose CHARACTER of timber, methods of manufacture, and complete responsibility enable them to be members of the Association.

THIS FACT IS YOUR PROTECTION.
ACCEPT NONE BUT TRADE-MARKED "TIDEWATER" CYPRESS



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Insist on TRADE-MARKED "Tidewater" Cypress at Your Local Lumber Dealer's

If he hasn't it, LET US KNOW

450 pages. Over 200 engravings. Cloth binding.



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"THE HONEYBEE"

By Langstroth and Dadant

Result-Producing Facts from
Seventy Years of Beekeeping
Experience

This book, from the pens of three of the world's master beekeepers—Langstroth, Charles Dadant and C. P. Dadant—is a classic, containing not only the lifelong experiences of these most practical beekeepers but also the most authoritative information on every phase of beekeeping.

Since Langstroth entrusted his book to the Dadant's, it has been revised several times and is now in its twenty-second edition. It still retains all the important teachings of Langstroth, however, whose principles and discoveries form the basis of modern beekeeping.

"The Honeybee" is used by many schools and colleges as a text book, and it is especially valuable because every subject is so cross-indexed that all the matter pertaining to it can be found with great ease.

Spend Your Winter Hours with These Masters

AIRCO

COMB FOUNDATION

For

COMB AND CHUNK HONEY

SINGLE-PLY AIRCO (light weights) is the best foundation for comb and chunk honey offered the beekeeper today, because of its immediate acceptance by the bees, its natural base angle—refined and milled by the famous AIRCO method.

For

BROOD AND EXTRACTING FRAMES

THREE-PLY AIRCO is made especially for brood and extracting frames, and is non-sagging, non-warping, non-stretching, all worker cells, not gnawed by the bees, and non-breakable in the extractor.

"I used 155 pounds of Three-ply foundation in almost every way you can think of, and you could not find a single comb sagged."—Emil W. Gutekunst, Colden, N. Y.

"I got some of your Three-ply foundation sheets at Chaapel's Seed Store at Williamsport, and it is the only kind I want in brood frames."—W. I. Shemory, Muncy, Penn.

"I can truly say that your discovery of the Three-ply **AIRCO foundation** is another long step forward toward producing perfect combs. Last spring I treated seventy some colonies for American foulbrood and shook them all on full sheets of Three-ply AIRCO foundation. The bees drew the combs out very rapidly and I have the finest lot of combs I ever saw.—I used three and four horizontal wires."—F. W. Churchill, West Valley, N. Y.

Send for 1924 Catalog, 64 Pages

It will be mighty interesting to you this year especially.

THE A. I. ROOT CO., MEDINA, O.
WEST SIDE STATION